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PROFIT**

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DEAR READER: LETTERS FROM A FAMILY FARM

THE BLANK PAGE

Recently, during an interview with a potential staff writer, our human resources rep asked an important question: how do you approach a blank page?

In the media and communications world, of course, we must manage this task daily.

I see the blank page as a chance to start afresh and tackle something new. In fact, the ongoing opportunity to learn and help the industry drew me to this career.

And this character trait has been with me as long as I can remember. As an undergrad student, I was perhaps that anomaly who had a rush of adrenaline when she sat down with a blank exam booklet. I enjoyed writing and research so much that I opted for grad school, which involved years of grappling with the blank page.

But, of course, all of us face writer's block – literally or figuratively – every once in a while.

Perhaps you are considering a new build or a retrofit of an existing barn and don't know where to start in weighing your options. On a more basic level, perhaps you're finally pushing yourself to tackle that reorganization of your shop you promised yourself months ago.

In my experience, the insights of others can often serve as a source of inspiration. You can chat with your peers about their systems and their lessons learned. This month, department writer **Richard Smelski** outlines an interesting experiment in his "Second Look" article on page 46.

You can turn to experts in the industry for their advice. If you're planning for your next meeting with your account manager, you may want to flip to page 43 for some insights from **Adam Vervoort**, the head of ag financing at **BMO Bank of Montreal**.

You can bounce your ideas off neighbours and advisers. Often, vocalizing your thoughts helps you realize that you already have a sense of the direction you'd like to head.

And, of course, I hope *Better Pork* provides some useful information for daily operations and longer-term planning.

So, go ahead. Dive into that next project. You've got this. **BP**

Andrea

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Chad Barry Photography

The Broeckel family of Petrolia, Ont. loves farming and the kids enjoy helping with barn chores whenever they can. From left to right: Flypp (9), Ferix (7), Fentt (6) and Faith (10).

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VIDEO GAMES TEST SWINE DISEASE CONTROL EFFORTS

These games can serve a new purpose beyond entertainment, thanks to the work of American researchers.

A team at the **University of Vermont (UVM)** is creating games and computer models to study how farmers' risk attitudes affect the spread of infectious animal diseases, a June university release said.

"We developed a series of games that look at compliance with rules on the farm," **Scott Merrill**, a research assistant professor at UVM, said to *Better Pork*. Over 2,000 people, both farmers and members of the general public, have played the games.

Players assumed the roles of hog farmers and made risk management decisions, the release said. The researchers examined how the participants responded to disease threats, which provides insight into the spread of porcine epidemic diarrhea virus.

This unique data gives researchers a more realistic representation of how outbreak scenarios could unfold and allows scientists to create more accurate prevention and control strategies.

"Every player in the industry has the opportunity and responsibility to make decisions that protect the system from disease," said **Gabriela Bucini**, a researcher at UVM and lead author of the study.

The next step is "to collaborate with the industry to develop interactive tools for decision-making where people can see" the outcomes of such scenarios as a disease outbreak, she said. **BP**

KEEPING ASF OUT OF CANADA

The feds and pork industry groups are developing a preparedness plan to keep a catastrophic swine disease out of the country.

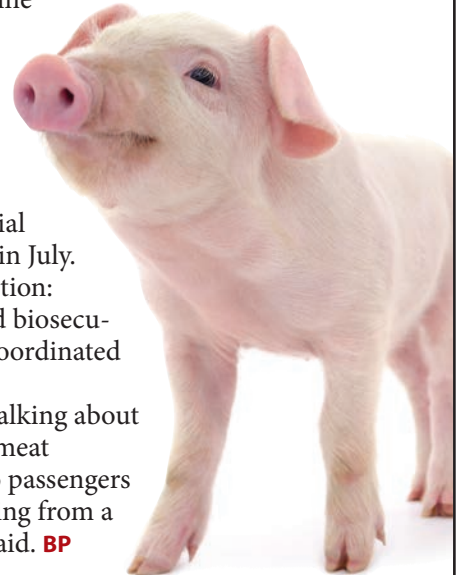
The **Canadian Food Inspection Agency (CFIA)** and **Canadian Pork Council (CPC)** are among the stakeholders creating a Pan-Canadian Action Plan to proactively manage African swine fever (ASF).

"What we're trying to do is have a more specific plan on how to mitigate the entry of ASF and, in the case that we get it, how to respond and recover," **Gabriela Guigou**, manager of the Swine Health Initiative with CPC, told *Better Pork*.

CFIA officials introduced a revised framework during its ASF Forum in Ottawa in the spring and stakeholders held further discussions during the federal-provincial-territorial ag ministers meeting in Quebec City in July.

The plan contains four pillars of action: preparedness and planning, enhanced biosecurity, ensure business continuity and coordinated risk communications.

"In areas like preparedness, we're talking about border controls and detecting illegal meat imports while also communicating to passengers what not to bring back if they're coming from a country infected with ASF," Guigou said. **BP**



Tsakhmister/Stock/Getty Images Plus photo

PRODUCERS SEE RED OVER MARKETS

In the ever-challenging pork business, Chinese market access issues are another roadblock that producers can ill afford.

In April 2018, U.S. President **Donald Trump's** actions led China to apply tariffs to U.S. pork imports. In June, China and Mexico imposed further tariffs.

As a result, Canadian prices fell over 40 per cent between early July and late August 2018, as the American market collapse dragged them down.

American hog prices initially rallied in 2019 on traders' assumption that China would begin importing large amounts of U.S.

pork. But that market failed to materialize as American exports to China remain constrained by the 62 per cent duties.

"The Government of Canada must respond," said **Gary Stordy**,

director of government and corporate affairs with the **Canadian Pork Council**.

"Its objective should be to strengthen the resiliency of Canada's pork production system so that it is better able to avoid or withstand market shocks such as the suspension of

pork exports to China."


Canadian pork producers are no strangers to roadblocks but many farmers feel we need action now to keep them out of the ditch. **BP**



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At federally inspected plants, workers use electronic probes to grade hogs. Staff insert the probe between the third and fourth ribs on the left side of the carcass to measure muscle and fat depths.

MODERNIZING PORK'S GRADING SYSTEM

by KATE AYERS

Industry stakeholders aim to improve pork classification tools, which should increase the sector's market competitiveness.

While pork remains the third-most popular meat (behind chicken and beef) for Canadians, global "pork consumption is stagnating in established markets at a time when world meat consumption is increasing. We are failing to get our share of the increased market," says Grant Walling, director at JSR Genetics in the United Kingdom and senior genetic scientist and chair of the Topigs Norsvin Meat Group.

Topigs Norsvin established a global meat group to develop solutions to the challenges that slaughterhouses, processors, packers and retailers face in the pork sector, the company's website says.

Many stakeholders point to the sector's outdated grading system, which largely focuses on carcass yield and lean meat yield, as the cause of this lag. The system lacks quality criteria.

"Currently, no official pork quality classification system is available in Canada. Commercial packers use different approaches to meet clients' demands in terms of quality classification," says Dr. Manuel Juárez, a livestock phenomics scientist with Agriculture and Agri-Food Canada (AAFC) in Lacombe, Alta.

These approaches are "mostly based on subjective sorting of primals for high-end domestic and international markets," he says. Primals are the whole cuts, including loins, ribs or hams, into which processors divide the carcasses of food animals, the Merriam-Webster dictionary says.

Pork packers commonly use "subjective standards and train staff on foreign quality control practices. An optimal classification system should be able to guarantee a minimum level of quality, with a high degree of accuracy."

Bill Wymenga, a pork producer from Chatham-Kent, Ont. and former Canadian Pork Council direc-

tor, believes quality measurement tools would benefit both producers and consumers.

These tools "would put measurables in place so that producers could have better feedback, which would help the industry by providing more information to genetics suppliers," he says. Such changes would help the swine sector provide higher-value products to consumers, Wymenga adds.

And industry stakeholders are hard at work on these projects.

Better Pork spoke with a producer, scientists and industry leaders to gain insights into what tools and methods of classification could come down the pipeline and how these developments could enhance Canada's pork sector.

Grading system limitations

Canada's pork carcass classification system is based on data from the 1992 National Pork Carcass Cutout project.

AAFC conducted this project to determine the average meat yield for carcasses and cuts, Canada Pork International's "Meat Yield" webpage says. In 1995, officials updated the equation that processing plants use to calculate the percentage of lean yield.

The pork classification system has seven hog grade classes, including ridgling, sow, stag and boar. These classes are subdivided into 12 grades of hog carcasses, says "Grading Regulations for Meat," an article published by the B.C. Cook Articulation Committee. Sows, for example, may fit into one of seven grades, depending on their back-fat levels and muscling.

At federally inspected plants, workers use electronic probes to grade hogs and determine producer payments. Staff insert the probe between the third and

PORK CLASSIFICATION TOOLS

fourth ribs on the left side of the carcass, the article says.

A sensor light at the end of the probe measures muscle and fat depths. Packers then use an equation to generate an estimate of the percentage of lean meat and assign a yield classification.

However, over the span of 25 years, the sector has improved pig genetics and evolved its processing practices, leading to significant changes in carcass composition. So, the sector could benefit from updates to develop accurate classification systems based on meat quality traits.

Some stakeholders argue, for example, that an “individual assessment point does not give an accurate depiction of the entire carcass,” says Walling.

New classification tools should “assess the carcass from a much broader range of measures.”

Currently, packing plant staff use colour cards to differentiate pork based on the amount of white colouring or marbling, says Jeng-Hung Liu, a research assistant at North Dakota State University.

Liu is working on computer vision system (CVS) technology that packers might be able to add to their operation lines within the next few years to identify meat quality.

Using colour cards as a method of “classification is very subjective, and



Pork colour and firmness, followed by flavour, juiciness and marbling are the most important attributes affecting a pork buyer's purchasing decision,” Dr. Manuel Juárez says.

the repeatability is low. You can have different results due to changes in personnel,” Liu adds.

“Fatigue and work environment can also affect grading” and increase the cases of human error.

Juárez agrees.

“Most of the current classification systems for pork-quality attributes lack accuracy and repeatability, are highly subjective, slow and time consuming, require manpower and often require extensive training.”

Meaty comparisons

In the beef sector, personnel trained by the Canadian Beef Grading Agency (CBGA) assign cattle carcasses one of 13 grades.

The labels range from Prime to E.

When grading a beef carcass, trained staff consider the animal's maturity, sex, conformation (muscling), fat (colour, texture and cover) and meat (colour, texture and marbling), the Beef Cattle Research Council's “Carcass Grading” webpage says.

Evaluators further assess grade A meats to determine the intramuscular fat content (marbling). Graders then label cuts with such grades as Canada A, AA, AAA or Prime to indicate quality.

To date, the pork sector does not have a scoring system for quality that retailers use at the consumer level. One possible reason: the sector selects animals for production efficiency and

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focuses less on improving meat quality, Liu says.

Unlike in the beef sector, only limited measures of meat quality traits exist in the pork sector. These measures are often necessary to comply with specific export market requirements. Though staff classify pork products for different global markets, cuts are not differentiated by official nomenclature in retail stores. So, consumers may not get consistent products with every pork purchase.

This situation may explain the reason why pork is failing to grow with increased meat consumption, Walling says.

Consumers want pork that is flavourful, tender and succulent, he says.

“Multiple studies have shown that pork colour and firmness, followed by flavour, juiciness and marbling are the most important attributes affecting a pork buyer’s purchasing decision,” Juárez adds.

“If we include quality attributes for all primals, additional traits – such as



Companies “want tools to be accurate, automated and easy to use. Tools also have to be robust enough so that workers don’t need to worry about them,” says Jeng-Hung Liu.

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Packing plant staff use colour cards to differentiate pork based on the amount of intramuscular fat or marbling. This method of classification is subjective and can have low repeatability.

primal composition and fat softness – must be considered when packing plant personnel try to meet the needs of all potential buyers.

“Developing new classification tools would help to increase domestic and international client confidence and willingness to pay, differentiate pork qualities from our main competitors and provide an enhanced national platform for further brand development,” he says.

Wymenga agrees.

“If the marketplace wants a higher-quality product,” packers must have a way to incentivize producers to meet the demands, he says. “We need a system to make that process work.”

New classification tools

Researchers and industry stakeholders are stepping up to the challenge to develop an improved classification system.

In June 2018, the pork sector welcomed a federal investment to address priorities. The Government of Canada will invest up to \$12.7 million in Swine Innovation Porc (SIP) through the *Canadian Agricultural Partnership*, an AAFC release says. SIP will also contribute up to \$5.8 million to this Swine Research and Development Cluster.

As part of this work, researchers are studying the best methods and

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tools for the classification of pork based on quality attributes, the release says.

One such tool is CVS, Liu says. These systems have three main components:

- **Industrial cameras** are more tolerant of cold, hot or humid conditions than digital cameras. Users can clean industrial cameras and employ coding to do more than just take pictures. For example, these cameras can connect to Wi-Fi, store data or crop images.
- **Dome light** ensures even and proper lighting, which is crucial with a CVS, to detect colour differences between muscle and lean tissue, for example.
- A **computer** automatically analyzes and grades pork.

CVSs are best at detecting marbling in pork loins. However, loins often have white connective tissue running down the middle of the cut. So, readings may not be accurate if workers have not trimmed off all the



AAFC Lacombe Research and Development Centre photo

“The pork market is not homogeneous – different sectors and different countries are looking for different things,” says Arnold Drung.

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PORK CLASSIFICATION TOOLS

connective tissue, Liu says.

Researchers are also exploring the use of hyperspectral imaging to grade pork. This technology “grabs visible wavelengths of light and turns them into a picture,” Liu says.

“Hyperspectral imaging grabs both visible and invisible wavelengths of light. The advantage of a hyperspectral imaging system versus a CVS is that it covers a larger scale of wavelengths.”

While hyperspectral imaging can assess meat below a loin’s surface and provide detailed information about meat characteristics, the computer needs a lot of time to scan and compile those readings, Liu says.

And the technology’s “application in the industry is a challenge because its analyses are much deeper than CVS. So, you must have someone who can analyze and interpret the data.”

Other potential tools for grading include commercial ultrasound and MRI (magnetic resonance imaging) technologies, says “Objective Methods for Pork Quality Evaluation,” an article published by the Canadian Centre for Swine Improvement.

In addition to automating colour recognition technologies, packers should examine and classify separate primals instead of using a single point measure to classify whole carcasses, some stakeholders say.

This approach could be an effective way to grade pork and ensure product quality, as customers “use each of

those primals very differently,” Walling says.

And the sector may soon have new technology in its reach.

Teams at “Agriculture and Agri-Food Canada, the Canadian Centre for Swine Improvement, the Centre de développement du porc du Québec and McGill University, for example, are collaborating with industry partners to come up with systems that could be implemented by commercial packers within the next two to five years,” Juárez says.

“These systems include both instruments currently available in the market as well as prototypes and new approaches with the potential to be fully developed in the short term.

“Other institutions in Canada, such as the University of Guelph, are working on projects related to tools linked to quality attributes in pork. Some commercial packers are also partnering with private companies to develop proprietary solutions to address specific quality issues.”

Path to implementation

Overall, new tools or technologies that could improve the pork industry’s classification system must focus on ease of “implementation and what the factories want,” says Liu.

Companies “want tools to be accurate, automated and easy to use. Tools also have to be robust enough so that workers don’t need to worry about them.”

Juárez agrees.

“To be implemented in commercial plants, these classification systems and tools need to integrate within the workflow and be able to operate at line speed,” he says.

“Automated systems, or those systems where the influence of the operator is minimized, would have greater chances of being adopted by commercial plants.”

The complexity of the global pork market and diversity in processors’ and consumers’ demands present challenges to the people who introduce a new system.

“The pork market is not homogeneous – different sectors and different countries are looking for different things,” says Arnold Drung, president of Conestoga Meat Packers in Breslau, Ont. This vertically integrated pork-processing plant works with family farms across Ontario, the company’s website says.

“This (market) situation makes a single classification system difficult,” Drung says.

“New tools will only benefit the industry if they provide a means to better meet the needs of the Canadian pork industry’s customers. There is no one-size-fits-all method of classification,” he adds.

Improving Canada’s pork label

Advanced Canadian pork classification systems could allow producers to see better carcass attributes of animals they raise and guarantee that customers and consumers have access to consistent pork products.

New “technologies could help processors get a better value for their end products as they could adjust customer and consumer product specifications,” says Jorge Correa,

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vice-president of market access and technical affairs at the Canadian Meat Council.

“With this more sophisticated information, producers could improve carcasses according to customer demands,” he says.

Juárez agrees.

“By combining different approaches and technologies with expertise in meat physiology and biochemistry,” packers can adapt new tools “to provide information that can be used to classify pork based on specific quality traits,” he says.

Introducing a quality element to pork classification and marketing could improve Canada’s position in the global marketplace.

“Pork quality consistency is critical for national and international buyers. With Canadian suppliers ranked at the top of buyers’ satisfaction survey lists, a new quality-guaranteed system would put Canadian pork in a more advantageous position to compete in international markets,” says Juárez.

“Moreover, with increasing market



AAFC Lacombe Research and Development Centre photo

New “technologies could help processors get a better value for their end products as they could adjust customer and consumer product specifications,” says Jorge Correa.

segmentation, a classification system based on quality would create efficiencies and new opportunities for Canadian companies. The development of rapid, objective and reliable methods for classifying pork quality will allow players at different points of the value chain to make decisions and enhance efficiency by selecting practices conducive to greater product

consistency and increase the percentage of high-quality cuts.”

The development and implementation of new tools for pork quality assessment and classification in processing plants could help producers achieve new premiums.

And consistent quality could prompt global consumers to go hog wild for Canadian pork. **BP**

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SECTOR SUCCESS:

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Swine industry experts share tips about business management to help improve your bottom line.

In some respects, producing pork is like becoming a millionaire: if it were easy, everyone would do it.

In both cases, success hinges on the mastery of many elements. The process sounds intimidating, but profiting in the pork sector – like making your first million – starts by learning from the people who have done it.

Risk management

“Over my 25 years in the hog business, margins have contracted. The markets are as volatile today as I’ve ever seen them,” says Steve Illick, a former director of Ontario Pork and owner of a 1,200-sow farrow-to-finish operation near Orangeville, Ont.

“This (situation) makes risk management critical” to reduce volatility, he says. “I don’t think you can accurately predict if the market will go up or down so, when prices appear that offer some degree of profit, it makes sense to take advantage of them through tools like hedging, options and futures.”

Though some people have a knack for risk management, most producers should consult an expert – a broker or a consultancy group – who can get them off to a running start.

“You need to become educated,” says Illick. “Jumping in without knowledge will become discouraging, and you may write off risk management as a tool.”

Without proper guidance, pork producers can succumb to two common stumbling blocks: timing and emotion.

“Everyone wants to learn how to hedge and get more for their hogs when the markets are at the bottom, but nobody is interested when prices are high,” says Illick.

Producers “go at (hedging) at the wrong time and

then, when things turn around, they ask, ‘Why did I hedge at that price?’

“People also tend to be overpowered by emotions,” he says. “You see what is going on in China in April and think that you had better not be overhedging; in fact, you should be hedging aggressively.”

In these situations, a coach can provide invaluable help when you form a plan. A coach can also give you the discipline to follow it, Illick says in an interview with *Better Pork*.

And, to make sure everyone in your farm operation is on the same page, everyone should buy into the plan, Illick advises.

Labour

“As businesses grow, you need more support to keep the barns running, and there’s only so much automation you can use,” says Andrea De Groot, managing director at the Ontario Pork Industry Council and a pork producer with a farrow-to-finish operation.

“Having boots on the ground is vital to reaching your goals but finding skilled labour to keep your barn fully staffed is really challenging.”

While no easy answers exist for acquiring labour, forward thinking helps. Try to get fully staffed before your workers are stretched too thin.

Increasingly, producers look to temporary foreign workers (TFWs) to fill out their teams. The application and hiring process can test your patience but is worth the effort in the end.

“Although the TFW process takes time and money, the upside is that you get some truly committed people who have left their home country and really want to work,” says De Groot.

“We’ve seen a huge increase in TFWs in pig barns



“Proper feeder management is one way to really improve the efficiency of your operation in terms of feed costs,” says Dr. Lee-Anne Huber.

over the last 24 months. It’s key to incorporate them (into your operation) in a meaningful and effective way that will make best use of their skills and attitude.”

The challenges of attracting labour are growing, so retention is more important than ever.

“It’s essential to set concrete expectations from the outset and learn some HR skills to manage people properly,” says De Groot.

“Communicating about work roles provides clarity for employees and increases the prospects of job satisfaction,” she adds.

Paying attention to the little details can be as important as the big picture.

“We did a survey within the swine sector, and one of the main priorities for staff was a designated lunch or break room that is clean and comfortable. Proper lighting in the barns also made a big difference,” she says.

“Combine (those environmental conditions) with showing respect for workers and recognizing their contributions to the business, and you’ll be on the right track.”

Nutrition

As feed costs comprise at least 60 per cent of a producer’s expenses, small improvements can have big effects.

“You can’t improve what you don’t measure, so we encourage producers to get a good handle on dollars of feed used per kilogram of gain,” says Dr. Lee-Anne Huber, an assistant professor of swine nutrition at the University of Guelph in Ontario.

“It’s critical to (meet) the pig’s nutrient requirements as closely as possible so you’re not oversupplying feed and wasting money, or under-supplying (feed) and impeding growth.”

One technique that supports this goal is phase feeding. Following this method, producers change swine diets in sequence as the animals grow and their nutrient needs change.

“We commonly do phase feeding in the nursery and at the grow-finish stage, but an emerging area is phase feeding for reproductive sows,” says Huber.

“Not a lot of people are doing it right now, but some promising re-

search shows we can improve sow productivity and longevity by precisely meeting her nutrient and energy requirements throughout her reproductive cycle.”

Feeder management is also vital and something producers can manage daily.

“In the nursery and grow-finish phases, we recommend that when pigs are fed *ad libitum*, 50 per cent of the feeder trough should be full. This (approach) ensures that you avoid spoilage and wastage while giving pigs what they want and need to maintain their growth rate,” she says.

“Proper feeder management is one way to really improve the efficiency of your operation in terms of feed costs.”

Animal health/biosecurity

Though the sector focused on biosecurity before the appearance of the porcine epidemic diarrhea virus, these best-management practices have since become even greater priorities in the industry.

“Biosecurity goes back to traffic control on the farm,” says Dr. Sue



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PORK SECTOR SUCCESS

Burlatschenko, veterinarian and owner of Goshen Ridge Veterinary Services in Tillsonburg, Ont.

“Make sure visiting vehicles go to the highest health locations first so they aren’t transporting unwanted material,” she says.

“I’m big on visual reminders of your biosecurity program such as gated entries for vehicles and locked doors. Even a Danish entry is a great visual. The bench is right there in your path, reminding you to take your boots off and swing your legs over just to get in the barn.”

It’s also important to understand how pathogens get into your barn. They can be carried on fomites, via pig-to-pig transfer or through the air.

You have so much to remember, so checklists can be valuable – to a point.

“You don’t need a list with 30 items, as you’re bound to get interrupted by a phone call or you’ll have to respond to an animal’s needs in the barn, and you may never get back to the list,” says Burlatschenko.

“Focus on five or 10 simple things.



National Pork Board and the Pork Checkoff, Des Moines, Iowa photo

“I’m big on visual reminders of your biosecurity program such as gated entries for vehicles and locked doors,” says Dr. Sue Burlatschenko.

Walk around once a month to ensure you’re doing what is needed.

“Do I have hand sanitizer? Am I changing the boot dip regularly? Do I clean and disinfect the shipping ramps regularly?”

The process sounds simple but, if it’s done regularly, it quickly becomes part of your routine. New staff can

sometimes assume this duty; they’ll bring a fresh set of eyes to spot things others miss.

Don’t be so hard on yourself that you get discouraged, though.

“When you finish that checklist or walk around, give yourself a pat on the back,” Burlatschenko says. “You deserve it.”

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National Pork Board and the Pork Checkoff, Des Moines, Iowa photo



“You can miss the most basic things if communication breaks down, so this is an area where room for improvement always exists,” says Tanya Terpstra.

Maximizing efficiency

“Especially in the pork business, where markets are constantly fluctuating, you need to know where you can cut costs when necessary and when you have flexibility to take on repairs or added expense,” says Tanya Terpstra, manager of Birchlawn Farms Ltd. near Listowel, Ont.

Ontario Pork recently featured Tanya and her husband Darryl in the farm management section of the organization’s “An Era of Change and Accountability: 2018 Social Responsibility Report.”

“In certain months in the pork business, markets tend to be consistently weak,” she says. “But we tend to forget that (trend) sometimes and think that things will always be awesome. Know the cycles and focus on where you can get the biggest bang for your buck.”

Paying attention to business details will pay big dividends for your operation.

“Herd health is number one,” says Terpstra. “Really nurturing those sows and spending time on each litter can maximize production. Your efforts will be reflected in the finishing barn and getting pigs to market.”

Another priority item should be equipment. Ensuring it is well maintained aids in efficiency. Staff spend less time on repairs and more time monitoring the animals.

And communication is key, too.

“It can be as simple as someone saying ‘We need to order more feed for Tuesday’ and nobody takes that (task) on,” says Terpstra. “You can miss the most basic things if communication breaks down, so this is an area where room for improvement always exists.”

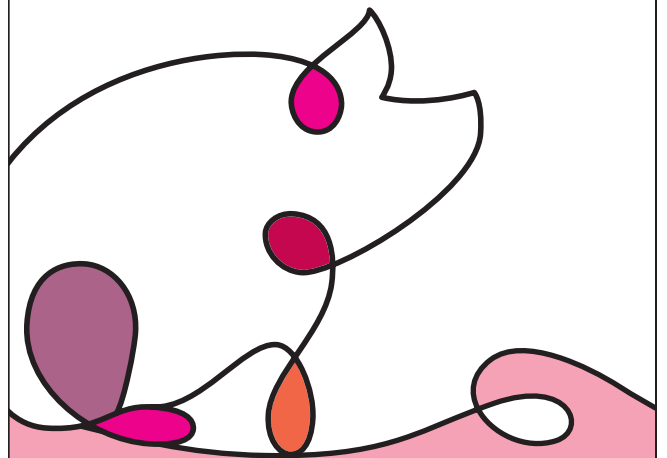
Even the best pork producer may not net a million dollars but, if your goal is to succeed and sustain, a few changes in the central aspects of the business could prove to be priceless. **BP**

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by
KATE
AYERS

ONGOING LEARNING IN THE SWINE SECTOR

This hog barn manager and his family are devoted to advancing their knowledge and networks.

Chad Barry Photography



Farming is a family affair for the Broeckels. From left to right: Faith (10), Flypp (9), Ferix (7), Ashley, Curtis and Fentt (6).

Curtis and Ashley Broeckel are proud farmers who work hard every day to produce quality pork. And they exemplify how being passionate about what you do can result in happiness and fulfilment.

Curtis grew up on a no-till cash crop operation in Ontario but developed an interest in animal husbandry about two decades ago.

He worked on many farms, ranging from 500- to 3,500-sow operations, to learn about different styles of production and gather information about the sector.

“This process allowed me to work with some of the greatest people in the industry,” Curtis says in an interview with *Better Pork*.

“I have been able to form what I consider extended families.” He has now worked in the swine industry for 21 years.

And, for a decade, Curtis’s wife Ashley has been by his side. She grew up on a tobacco farm and the couple attended the same high school.

They reconnected while Ashley pursued a career in teaching and the

couple married in 2009.

For three years, the couple managed a 600-sow farrow-to-finish operation outside of Petrolia, Ont. with the help of a herds person. They transitioned 95 per cent of the operation to loose sow housing and they batch farrowed 108 sows every four weeks. They raised all the pigs to market size.

Often, Curtis and Ashley are accompanied to work by their four children: Faith (10), Flypp (9), Ferix (7) and Fentt (6).

“The entire family is involved in the farm,” Curtis says.

“My boys go to the barn daily and Faith is the pig cuddler, which is also an asset to good hog production.”

Now, the family is set to embark on the next stage in their journey: Curtis will start a new position as barn manager on a 2,800-sow operation near Monkton, Ont.

He looks forward to working with the latest technology available to the industry, while also watching his kids grow from lessons learned in the classroom and on the farm.

What are your roles on your farm?

I manage operations and production.

Hours you work per week?

I work an average of 75 hours per week.

Hours in the office per day?

I spend about an hour per day in the office.

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

Three items usually on my desk are the computer, coffee cups and the ultrasound machine.

Email or text?

I prefer text messaging to email.

Any favourite apps?

The only app I use is Twitter.

What role does social media play in your life?

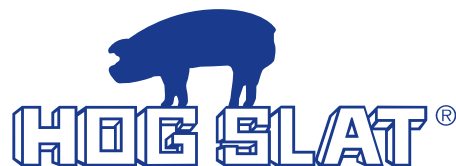
Social media doesn’t play a huge role in my daily life. It’s more just something to read on coffee break.



we want to take a moment and introduce ourselves.

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What do you like best about farming?

Every day on the farm is a different challenge.

What do you like least?

I would say that you can never actually leave the farm.

What's your top tip about farm transition planning?

Follow your instincts.

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

Not to open an AI (artificial insemination) bottle with your teeth.

And another thing I have learned in this business is to never 'burn a bridge.'

What's your guiding management principle?

My personal guiding management principle for the farm is to leave the barn every night believing that someone might make a video of your work.

What's your top goal?

To never stop becoming better at what I do.

How do you define success?

My definition of success is that my kids can look at what I do and think 'that's what I want to do when I grow up.'

What are the biggest challenges you face in the agricultural industry and how have you addressed them?

The biggest challenges I've faced are the skewed ideas that the general public has of the farming industry and the huge disconnect of these ideas from reality.

We address these challenges by trying to show what we do on the farm whenever we can.

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

I am a member of the Lambton Pork Producers' Association.

If you could send a message to non-farmers, what would you say?

I would say farming is the most satisfying and selfless occupation in existence.

If you weren't a farmer, what do you think you'd be doing for a living?

If I wasn't a farmer, I would be a veterinarian.

How do you support your mental health during the busy times of the year?

I try to support my mental health by making time for family and friends, even if only for a short talk on the phone.

Everyone has a phone, so talk to someone.

What are your hobbies or recreational activities?

Watching my kids play sports – if that can be considered a hobby.

How often do you travel?

Three weekends per year.

Where did you last travel to?

Collingwood, Ont.

Is your farm vehicle messy or neat?

The farm vehicle is normally neat but always stinks.

What was the last piece of equipment you bought for your shop?

I bought half a dozen half-inch wrenches.

What's the best time of day?

Dinner with my family.

We always go around the table and share our favourite parts of the day. The kids love it.

What was your most memorable production year? Why?

Our most memorable production year was 2009.

That's the year we got married and started to grow our own herd of little farmers. **BP**



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HOW TO IDENTIFY ASF IN A SWINE HERD

As this virus can result in high mortality and economic losses, we must understand its causes and symptoms.



Wild boar can act as a reservoir for ASF and their populations have increased within Canada, particularly within the Prairie provinces.

African swine fever (ASF) is caused by a large DNA virus in the family *Asfarviridae* that only affects members of the pig family. The disease cannot be transmitted to humans.

The virus has 24 different genotypes, which are variations in genetic makeup. Of these, all 24 are found in Africa but only two are found in Asian and European countries. North America has not had any cases of ASF.

Industry stakeholders can monitor genotypes to better track the virus and determine where cases may have originated. The severity of disease and symptoms seen can vary depending on the genotype present.

In the current European and Asian outbreaks, transmission is predominantly caused by direct contact between healthy and sick animals. Usually, infection occurs through contact with the nose and mouth as oral and nasal fluids can contain a high concentration of the virus.

Transmission can also occur if the pig consumes infected pork products. The virus can remain in chilled pork

products for up to 110 days and cured products for up to 300 days.

One group of tick species can also transmit ASF. This type of transmission occurs in Africa where the disease is common.

However, industry experts do not have a clear understanding of the role of ticks in the current outbreak and believe their influence to be minimal. Some species of these ticks are found in North America but, in Canada, they are only located in a small area of southern British Columbia.

After infection with ASF, symptoms usually appear within four to nineteen days. The virus travels from the point of contact to the nearest lymph nodes where it enters the blood and moves around the body.

The virus can replicate in many types of cells. Most replication occurs in certain immune cells but liver cells, certain kidney cells, and cells that line blood vessels can also be affected.

Destruction of the cells lining blood vessels can result in bleeding, which producers and vets commonly see in pigs affected by this disease.

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Bleeding often results in a bruised appearance of the ears and flanks.

Pigs' skin may develop a blotchy pink and purple pattern. The animals can also exhibit bloody discharge from the nose or bloody diarrhea.

Other symptoms unrelated to hemorrhaging may include abortion and a high, intermittent fever.

In the final stages of disease, affected animals can develop discharge from the nose and difficulty breathing due to fluid accumulation in the lungs. This accumulation is often the cause of death in infected animals.

Death in naïve populations usually occurs within one to seven days after the appearance of clinical signs. Mortality rates can reach 90 to 100 per cent within these populations. If the disease reached North America, we could expect such mortality rates.

On post-mortem, the changes to the animal are predominantly seen in the spleen, lymph nodes, kidneys, heart and lungs.

The spleen is often enlarged and darkened while the surface of the



Dr. Egan Brockhoff photo

Hemorrhage within multiple organs, as seen in this cecum, is commonly seen on post-mortem of ASF-infected pigs.

kidneys may have multiple small, red dots from hemorrhaging. The lymph nodes are usually also dark red and break apart easily. Bloody fluid may be found in the sac around the heart. Finally, the lungs may be fluid filled with evidence of pneumonia.

ASF affects all age groups of swine equally. This feature is important for differentiating ASF from other diseases, as most diseases more readily affect a specific age group.

For example, classical swine fever presents with similar symptoms to ASF but predominantly results in death among young pigs and is caused by an unrelated virus.

Often, vets and laboratory staff confirm an ASF infection by detecting the virus's genetic sequence in either blood or tissue.

While no vaccine exists for ASF, scientists are researching ways to develop one.

However, multiple factors make vaccine development a challenge. The large size of the virus makes it difficult to determine which portion of the virus the vaccine should target to prevent disease.

As well, a vaccine may not provide cross protection for all variants of the virus, necessitating the creation of a different vaccine for each variant.

Despite these challenges, small-scale trials have shown efficacy of a preliminary vaccine in domestic pigs and of an oral vaccine in wild

boars. But researchers must conduct large-scale trials before producers and veterinarians may potentially use these vaccines commercially.

Since 2016, the number of ASF outbreaks reported to the World Organisation for Animal Health (OIE) has increased. ASF is now present in countries in Africa, Asia and Europe.

Over 2.5 million animals either died from the disease or were culled on infected premises between 2016 and May 2019, the OIE's global report stated.

Between August 2 and 16, the OIE reported 328 new outbreaks and 7,914 ongoing outbreaks. The number of new outbreaks decreased from the previous two-week period when 1,926 outbreaks were documented. During this period, stakeholders reported 164,111 animals as losses as a result of ASF.

Ten countries in Europe and six countries in Asia documented new or ongoing cases. Most ongoing cases were in Vietnam although Europe experienced the most losses.

As ASF is a reportable disease in Canada and causes significant economic losses, producers must contact their veterinarians immediately if they see the symptoms listed above or suspect ASF within their herds. **BP**

Dr. Hollyn Maloney is a veterinarian with Prairie Swine Health Services in Red Deer, Alta.

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DISEASE RESPONSE STRUCTURE ESTABLISHED

Ontario's pork industry leaders have created a system to manage responses to animal disease emergencies.

Jodie Aldred photo



“Our focus is to get producers back to profitability as soon as possible and to make sure that we have on-the-ground, practical responses in place,” said Amy Cronin.

Foreign Animal Disease preparedness took a significant step forward in 2018 with the establishment of the Swine Health Ontario (SHO) incident command centre. Since the threat of African swine fever (ASF) shows no sign of dissipating, a partial activation of that new resource came into place last fall.

What does that command centre mean for Ontario's pork industry? Even though a lot of work must still be done, the industry has never been this well prepared for an animal disease emergency, industry leaders say.

The incident command centre is a structure that authorities use when responding to a crisis. This structure enables everyone involved to know exactly what their roles and responsibilities are ahead of time so their responses are coordinated and effective.

The Canadian Food Inspection

Agency and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) each have incident command centres to manage their responses to animal disease emergencies. Until now, however, the Ontario pork industry did not.

“As the pork industry, we knew we were unprepared for big diseases coming into the swine herd in Ontario,” said Amy Cronin, SHO chair, citing the 2014 porcine epidemic diarrhea outbreak as an example.

“SHO thought it was important to set up a structure of people who work together and can jump into action to respond to a disease coming into Ontario in a more organized, efficient and faster way.”

The system ensures everyone focuses on specific pre-assigned tasks, allows for standardized responses regardless of location and reduces duplication, said Dr. Christa Arsenault. She is a lead veterinarian in

OMAFRA's animal health and welfare branch. Dr. Arsenault is also part of the SHO leadership team and planning team lead for OMAFRA's incident command.

“When you have incident command structures in place with the federal and provincial governments and industry, it allows us to be cost-effective,” she said.

Dr. Arsenault gave the examples of efficiency and the use of physical and human resources.

“The (system) allows for clear communication when everyone uses the same language,” she said.

SHO has been developing its incident command structure for about a year, identifying commanders and team leads within the industry for important areas of response, and facilitating training. Since the partial activation of the centre last fall, those teams have kicked into gear, identifying gaps and putting producer-

focused solutions in place.

“Our focus is to get producers back to profitability as soon as possible and to make sure that we have on-the-ground, practical responses in place,” said Cronin.

“Through the partial activation, we’ve been able to think through what producers and their families will need to know if African swine fever comes so they can make good decisions on their farms.”

The partial activation of the centre includes dealing with tough topics like zoning or depopulation – from developing potential scenarios and responses to financial, legal and communications considerations.

Through the partial activation, for example, team members are working out the specifics of euthanasia techniques. The team is also exploring the practicality and suitability of various disposal plans, including understanding what would happen under each of the potential scenarios and how responsibilities would be assigned.

As problems are addressed, information is uploaded to a so-called “black” website that is ready to go live instantly should ASF be confirmed in North America.

Dr. Cathy Templeton is one of two industry liaisons to government, responsible for ensuring the industry receives the latest information as soon as possible from the government incident command centres. During a crisis, she would be on the ground in one of those centres.

“In a full outbreak, we would be embedded with their activity centres so we can feed back organically to SHO

what’s happening,” Dr. Templeton explained.

One of the key learnings through the partial activation process is just how much time and energy response requires, Cronin said. But coordination and preparedness help spread resources further.

“You can see fatigue creeping in, so we need to also look at how we can set this (system) up in a better way to be able to sustain working through a real disease crisis,” she added.

However, the benefits of planning are already starting to pay off with the recent discovery of Senecavirus A (also known as Seneca Valley virus).

“We’re definitely more coordinated. We could bring people together that same day from Ontario Pork, the Ontario Pork Industry Council, OMAFRA and SHO and talk about testing, control and eradication, funding issues and how to coordinate messaging as government and industry,” she said.

This project was funded in part through the *Canadian Agricultural Partnership* (the *Partnership*), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of the *Partnership* in Canada. **BP**

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

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by
**HAYLEY BOWLING
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ENRICHMENT FOR PIGLETS

While straw is a popular enrichment, this study explored more practical options.

During the summer of 2018, Hayley Bowling, then an undergraduate student at the University of Saskatchewan, carried out a research project at the Prairie Swine Centre. She examined effective and practical ways of enriching piglets in farrowing and nursery.

Recent interest in environmental enrichment stems from the National Farm Animal Care Council's 2014 update to the Canadian Code of Practice for the Care and Handling of Pigs. All pigs must have "multiple forms of enrichment that aim to improve the welfare of the animals through the enhancement of their physical and social environments," the code states.

The lack of enrichment can lead to problematic behaviours such as tail-biting and belly-nosing. Producers need practical and cost-effective solutions that they can implement.

Pigs are intelligent and curious from birth, and the lactation and nursery periods are critical for their mental and physical development.

Despite this knowledge, the sector lacks in-depth research on suitable piglet enrichments.

Piglets given enrichment have increased play and exploratory behaviours and decreased aggression, tail-biting and belly-nosing, research shows. Some evidence exists of improved growth and meat quality when pigs are given enrichment, so enrichment could benefit production as well as welfare.

Unfortunately, scientists have conducted most studies on enrichment for pigs using substrates such as straw. While straw is effective and attractive to pigs, it isn't feasible for most Canadian barns because of biosecurity risks and slatted flooring systems.

So, this project looked at enrichment alternatives such as commercially available pig toys hung from chains, segments of PVC pipe, hanging knotted cotton rope, rubber mats and hay cubes.

To help maintain pigs' interest, researchers provided the animals with three or four objects at once, and scientists rotated the set of enrichments twice per week.

Researchers used 30 litters for the experiment: ten litters received enrichment only in the nursery (from four to eight weeks of age), ten received enrichment both pre-weaning and in the nursery, and ten received no enrichment.

Scientists weighed all piglets shortly after birth, at weaning (approximately 28 days of age), and at eight weeks. Technicians used video cameras to record piglet behaviour in their nursery pens at weaning, two weeks post-weaning and four weeks post-weaning.

Researchers recorded piglets' skin lesions before weaning, 24 hours post-weaning and four weeks post-weaning. Finally, scientists assessed the pigs' fear of humans by measuring their latency to approach and contact a person.

Piglets given enrichment before weaning showed less pen-mate manipulation (tail-biting, ear-biting, belly-nosing, etc.) and tended to fight less at weaning than the other pigs, research showed.

These findings are important because weaning is stressful for piglets.

So, anything that can help to reduce weaning stress could benefit their health, welfare and productivity throughout the nursery and beyond.

Similarly, piglets given enrichment only in the nursery had fewer head and shoulder lesions at four weeks post-weaning than the other groups, indicating that the piglets with enrichment fought less towards the end of the nursery phase.

Additionally, pigs with enrichment spent more time exploring their pens at three weeks post-weaning, indicating that they were more engaged with their surroundings. Pigs enriched post-weaning also showed reduced fear of

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Of the enrichment objects used, the hanging knotted cotton rope was the most popular with the pigs.

humans, which has implications for both welfare and ease of handling.

While the scientists found no difference in growth between the groups, previous research indicates that the effects of early enrichment on growth are greater later in the pigs' lives.

Scientists did not follow the pigs from this trial after eight weeks of age. Researchers should conduct more studies about the long-term growth and welfare effects of enrichment.

Of the enrichment objects used, the hanging knotted cotton rope was the most popular with the animals. Pigs prefer malleable objects that they can chew and destroy because these qualities allow them to express their instinctive rooting and foraging behaviours. The attractiveness of the rope and its low cost make it a viable alternative to substrates such as straw.

However, the drawback of destructible enrichments such as rope is that they need to be replaced regularly. As such, these objects may be more labour intensive than something that can be used for a longer period.

If producers desire more durable options requiring less labour, piglets were also attracted to commercial pig toys hanging from chains. However, these objects involve higher initial costs.

Both the rope and the pig toys had the advantage of being suspended off the ground. These objects were not soiled by feces, unlike the rubber mat and PVC pipe which were placed on the floor of the pen.

For producers looking to implement physical enrichment in their barns, a rotation of several inexpensive objects can be effective to increase piglets' exploration and reduce manipulation of pen-mates, this study found.

Environmental enrichment for piglets is an exciting area of research because it also has potential to improve pig health, productivity, and public perceptions of the swine industry. **BP**

Hayley Bowling worked as a summer research assistant at Prairie Swine Centre (PSC). Dr. Jennifer Brown is a research scientist at PSC. The centre conducts near-market research that can be applied by the pork industry within a one- to seven-year time frame.

This research project was funded by an NSERC Undergraduate Student Research Award and by PSC.

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by
**EUGENE
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DOES MOULD AFFECT SWINE PERFORMANCE?

As we learn more about gut microbiota, the need to avoid mould contamination in feed is better understood.

National Pork Board and the Pork Checkoff, Des Moines, Iowa photo



The presence of mycotoxins in feed has a pronounced effect on the intestinal health and the microbiota of swine.

Swine producers are increasingly looking for ways to reduce the amount of antibiotics they use to maintain swine health.

Probiotics, prebiotics, yeasts, essential oils and other alternatives are finding their way into swine diets, and producers are seeing positive results from the inclusion of these products.

Recent research focuses on maintaining and supporting the balance and diversity of the beneficial organisms found in the gastrointestinal tract of pigs.

Also called the gut microbiota, this microbial population living in the intestines of pigs could be the key to raising swine without the use of antibiotics.

But what if we feed all the right ingredients to support good microbiota balance and then feed our pigs a high

level of mould in the feed?

Should we also work to control mould as part of our antibiotic reduction strategy?

Before we can answer the question about mould in feed, we need to understand what makes up the gut microbiota.

Past research has focused on bacterial microbiota, but “current evidence documents that nearly anywhere there is a bacterial microbiota, there are also fungal, viral, archae and perhaps protozoan community members” (Limon et al. 2017).

We are learning the microbiota on our skin, in our mouth and in our gastrointestinal tract are vastly more complex than we ever imagined. Maintaining a balance in, and the health of, this thriving microbiota population is part of maintaining our health and balance – as well as that of

our swine populations.

Part of maintaining intestinal balance in swine is reducing non-beneficial organisms including mould found in feed. Scientists conducted one of the first experiments to evaluate the effects of mould on animal performance in 1982.

In this study, the research team fed mouldy grain, without mycotoxins, to broiler chickens. The scientists found mouldy grains reduced the dietary fat level, and significantly ($P < 0.05$) lowered metabolizable energy (ME) values and depressed performance.

Soybean oil supplementations to diets containing these grains increased dietary ME values and partially or completely restored performance. The decreased energy level in diets containing ground mouldy grains is an important factor for their reduced nutritional value, the re-



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searchers summarized (Bartov et al. 1982).

Another concern with mouldy feed is the formation of mycotoxins.

They are the secondary metabolites of mould growth. These microscopic contaminants are formed in the crop while still in the field and while the crop is in storage.

Once formed, mycotoxins are not easily destroyed and grain testing is

the only reliable way a producer can determine if these toxins are present in feed ingredients.

Research has demonstrated the presence of mycotoxins in feed has a pronounced effect on the intestinal health and the microbiota of swine.

With swine, one of the biggest problems with mycotoxin-contaminated feed is that the signs and symptoms present as other

disease conditions. For example, consumption of a mycotoxin called fumonisin can lead to liver damage and pulmonary edema in pigs.

In a study conducted in France, researchers examined the effect of oral exposure to fumonisin-containing culture material on lung inflammation. What they discovered was exposure to fumonisin predisposed pigs to respiratory disease caused by *Pasteurella multocida* (Halloy et al. 2005).

Another mycotoxin found to effect gut health is deoxynivalenol or DON. This mycotoxin and its role in targeting mucus and microbiota are well documented (Robert et al., 2017).

DON can impair the integrity and tissue of the pig's gut, shorten the height of villi, inhibit differentiation of gut cells and damage the balance of gut microbiota.

Controlling mould growth in storage can help reduce the formation of mycotoxins and reduce their effects on performance.

Moulds are found everywhere and controlling their growth is a challenge, but manageable.

Due to the significant affect moulds can have on the bottom line for pork producers, managing mould correctly is crucial. **BP**

Eugene Rodberg is a product manager at Kemin Industries, Inc. He is responsible for the mould inhibitor product line. Rodberg has worked in the feed industry for nearly 30 years focusing on ingredients which improve livestock and poultry efficiency.

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Reporting Wild Pigs in Ontario

The information in this article has been adapted from the Ontario Ministry of Natural Resources and Forestry webpage and can be found by visiting www.ontario.ca and searching for 'wild pigs'.

The Ontario Ministry of Natural Resources and Forestry (MNRF) is requesting that any sighting of wild or escaped pigs in Ontario be reported. It is important for MNRF to know about wild pig sightings for the many reasons highlighted below. Instructions for reporting can be found below.

What are wild pigs?

The term "wild pigs" encompasses several types of swine that are all the same species (*Sus scrofa*):

1. Eurasian wild boar
2. escaped domesticated pigs that have become wild (or 'feral') and ownership cannot be determined
3. hybrids of wild boar and domesticated pigs
4. any offspring resulting from reproduction in the wild

We refer to all of these animals as wild pigs in their introduced range

because we don't necessarily know which of the four types a given animal is.

In Ontario wild boar are imported, bred, and raised as alternative livestock on farms for meat. The *Fish and Wildlife Conservation Act (FWCA)* prohibits the unauthorized release of imported wildlife including wild boar. If you keep wild boar, you must make sure the animals are kept securely on your property, immediately report any escapes to the MNRF, capture or kill the escapees as soon as possible, and you may be legally responsible for the cost of recovering escaped or released animals.

Domestic farmed pigs are also raised in Ontario and may occasionally escape. Domestic farmed pigs have been known to look more like their wild boar ancestors when living in the wild and can breed with other escaped pigs, including wild boar, to create hybrids.

Impact on environment

Domestic farmed pigs and boar that have been released or escape, quickly adapt to their new surroundings

and become wild (or 'feral'). They can have negative impacts on native wildlife and ecosystems, and their high reproductive potential makes their impacts more severe. Risks associated with all kinds of wild pigs include:

- preying upon native wildlife
- competing with native wildlife for food, water, and space
- grazing on and trampling plants, including valuable vegetable and grain crops
- rooting into the ground with their tusks and snouts to dig for roots, tubers, bulbs, worms, insects, slugs, and snails
- spreading disease to livestock, native wildlife, pets, and humans
- aggressive behavior towards livestock, humans, and pets

Impacts associated with wild pigs include:

- putting native wildlife and ecosystem health at risk
- threats to species at risk plants and habitats
- damage to crops, pasturelands, and sensitive ecosystems
- predation of livestock and disease transmission



A group of wild pigs photographed in Saskatchewan (Courtesy Dan Sakal)

- high costs to control the wild pigs if they become established in any part of Ontario

The damage wild pigs can cause and the difficulty in bringing them under control once they are established is an ongoing issue in other jurisdictions worldwide, including Canadian prairie provinces (Alberta, Saskatchewan, and Manitoba) and 39 US states, from California to Florida.

Reporting wild pigs

Efforts are currently underway to learn more about wild pigs in Ontario. If you see a wild pig or have information about a wild pig sighting, please report it to:

- iNaturalist Ontario Wild Pig Reporting (<https://www.inaturalist.org/projects/ontario-wild-pig-reporting>)
- MNRF-SpeciesConservationPolicyBranch@ontario.ca

Property owners

Private landowners have the right to protect their property from wildlife damage. Visit the MNRF webpage for more information: <https://www.ontario.ca/page/harass-capture-or-kill-wild-animal-damaging-private-property>. All relevant federal, provincial and municipal legislation regarding trespassing, discharge of firearms by-laws and firearm licensing requirements also apply.

The Value of Stockmanship

Whenever I listen to someone with great enthusiasm for stockmanship and the importance of watching, learning from, and interacting with the animals that provide their livelihood, I am struck by the potential good stockmanship offers.

Animals differ from one another and while it's good to have a standard operating protocol, it's equally important that a stockperson has the experience, depth of understand-



ing, and the confidence to modify procedures when necessary, even improvising and improving them as time goes by. This is something that experienced farmers do naturally. Employed staff may need training and encouragement to take these extra actions. The effort can be very well worthwhile. For example, I've been told that the successful management of the breeding herd may account for about two-thirds of the variation in the numbers of weaners successfully produced. Studies have shown that a good deal of the shortcomings in the breeding herd are due to management factors such as accurately detecting heat. This may sound easy to brush off, but in a study of six workers, it was found that differences in the workers skills, ability, and persistence could halve the number of piglets produced. Shorting potential production efficiency by 50%, or even a fraction of that, is not trivial. The unused barn space and non-productive sows represent a real cost.

I have seen some very persuasive numbers to illustrate this point. It has been calculated that spending

one extra minute per sow in estrus detection could improve farrowing rate to the extent that the financial returns on that extra minute per sow was equivalent to being paid the about \$180/hour for those minutes. If you or your employees are currently earning less than that, then this may sound like a pretty good deal.

This is a specific example, but the principal of obtaining high returns for the development of quality stockmanship, and motivated employees who have an interest in the success of the operation, apply across all aspects of production. An aware and involved stockperson was always a key ingredient.

In my opinion, it seems pretty clear that providing feedback to barn staff on how things are going (good and bad) and providing encouragement or even financial incentives to continually strive for improvement cannot go wrong.

Jaydee Smith
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Step Up Your Farm's Biosecurity

Precautions against the transfer of disease vectors into livestock operations, or their transfer out of them, should never be allowed to slip because of complacency. The protocols and operating procedures put into place to prevent disease entry or transfer are collectively referred to as biosecurity – basically just securing a farm against disease entry or spread.

A vet from Minnesota once told the audience at the Southwestern Ontario Pork Conference that “I know of no diseases that help farmers make money.” Given that fact, any farmer should never knowingly allow diseases to enter their operation if it can be avoided. He said that any idea that biosecurity is not


worth the cost or the effort needs to be thrown out.

If the real cost of disease, both treatment costs and labour and costs because of reduced production, are taken into account it becomes clear that not getting a disease in the first place is the clear winner. When it comes to biosecurity, whether it be organising pig flow, acclimating new stock, the use of isolation units, or supplying coveralls and boots for visitors, etc., the word “can’t” must be removed from our vocabulary. It’s true that biosecurity is not free, but is it worth the cost? Yes.

Every farm is different and will have a biosecurity program tailored to the operation. Keep in mind all potential points of disease vector entry. This might start with a list

like this: pigs (including weaners, market hogs, gilts, culls, etc. and deadstock), semen, feed, supplies, water, equipment, air, pests such as insects and rodents, and people (which includes shoes, clothing, etc.). Setting up a biosecurity protocol from scratch can appear to be a daunting task, but it isn’t really. Taking a moment to think about your farm and imagining where disease might gain access, and taking steps that would stop it or at least reduce the risk, is a good start. To help in this process, we have put together a 10 step guide to implementing an effective biosecurity plan. Implementing any of these suggestions will reduce the risk of disease entry. Each additional step implemented will further reduce biosecurity risks. They are not necessarily in any order of priority:

1. Quarantine replacement stock, or at least ensure that their health status is compatible with the existing herd.
2. Restrict entry to essential personnel and record the entry of all visitors.
3. Provide boots and coveralls for staff and visitors for each barn.
4. Staff should change into dedicated boots and coveralls upon entering each different barn. Clean footbaths may be appropriate within a barn for different rooms.
5. Provide shower facilities for visitors.
6. Minimise the entry of equipment, supplies, and so on, and take appropriate precautions such as disinfection, removal from shipping boxes, etc.
7. Prevent entry by wild animals, such as rats, birds and insects, or domestic dogs and cats. Use screens in windows, air inlets and doors.
8. Use a semen supplier that routinely tests for PRRS virus and other infectious agents.



Report to Office located at: _____

Or call _____ at phone number: _____

9. Ensure that feed and water sources are free from infectious agents.
10. Review your biosecurity plan and herd health program, including vaccination protocols, with your veterinarian on a regular basis.

To make the best decisions about what biosecurity procedures are worthwhile, or what diseases are currently prevalent and need watching out for, producers need a good relationship with a knowledgeable swine vet and need to be on top of things themselves. Events like the Shakespeare Swine Seminar, the Southwestern Ontario Pork Conference, and the London Swine Conference (www.londonswineconference.ca) are effective ways to learn and discuss what's new and what leading researchers, practitioners, and producers are thinking. For more information on biosecurity and herd health, visit <http://www.omafra.gov.on.ca/english/livestock/swine/health.html>

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Ontario Animal Health Network (OAHN) Swine Network Report

The following is an excerpt from the OAHN 2019 Q2 report. To see the full report, which includes articles on **African Swine Fever**, go to www.oahn.ca.

Senecavirus A (SVA) detection on-farm. What swine producers need to look for...

Dr. Ryan Tenbergen updated the OAHN Swine Network on the clinical signs seen following the detection of SVA in two sow herds in Ontario:

- Two sow herds in Ontario were confirmed positive for SVA in late July 2019.
- There is a connection between the two sow herds with some shared trucking and feed.
- The initial clinical signs in both herds were sows off feed and piglet scours.
 - Early on there were approximately 30 to 40 percent of piglets scouring with up to 70% mortality in affected litters. This lasted for 3 weeks
 - Sow mortality rose from a normal 6 to 8% to a level of 12 to 15 % for a short 3 to 4 weeks. It appeared that sows that were already compromised were the sows that they tended to lose to mortality
- There were no reports of lameness, but sows were housed in stalls
- There were no clinical signs in positive nurseries. Subsequently, personnel at the farm forwarded photos of blisters seen on a few sows to their veterinarian. Prevalence was very low with less than 10% of sows showing lesions. CFIA was then contacted by the herd veterinarian and visited both farms to conduct a disease investigation. Confirmation was provided 3 days later that there was no foreign animal diseases detected, but both farms were SVA positive on PCR tests

Take home message: It is important for producers and industry

members to understand that the associated clinical signs were very subtle in both of these cases and could have been easily missed or overlooked by both the barn managers and the responding veterinarian. Producers and veterinarians need to be aware of this and ensure that follow-ups with on-farm veterinary visits and diagnostic testing occurs if scours and sow sudden deaths are reported.

- Subsequently all nurseries and finishing barns are being tested for SVA. Since August, approximately 8 weeks after the suspected outbreak occurred, pigs from one herd after one week in the nursery are testing negative. Pigs are also being tested at the end of the nursery and entry to the finishing

Porcine Epidemic Diarrhea (PED) & Porcine Deltacoronavirus (PDCoV) Update

No new PED sites in Ontario in Q2, however the 2019 PED outbreak in Manitoba stresses the importance of remaining vigilant with biosecurity measures...

Dr. Tim Pasma reported that there were no new PED sites in Q2, but two new sites confirmed PDCoV in Ontario:

- April 2019: PDCoV, farrow to wean, Middlesex County
- June 2019: PDCoV, finisher, Huron County

Dr. Al Scorgie reported that as of July 30, 2019, Manitoba has 48 PED positive premises with 46 of these occurring since May 1, 2019

There are 18 finisher sites, 19 sow sites as well as some farrow to finish sites. By comparison, there were 80

premises infected in 2017 which has been the worst year to date. The exact reasons for the increased number of cases is not clear. May and June appear to be the start of the PED season in Manitoba. Transport does not appear to be a problem with many trailers being “baked”. Trailers are cleaned washed and disinfected after dropping off pigs at the processor and do not return unwashed to the farm.

PED is still a pathogen of concern for Ontario. This summary greatly supports the need for enhanced biosecurity practices being followed. Biosecurity involves both on farm and beyond the farm aspects.

How can producers engage in OAHN?

Read our quarterly producer reports and let us know what you think! Discuss the material included in these reports with you herd veterinarian and other swine producers. Help us spread the word!

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Helping High Risk Piglets in the Farrowing Room

This is the first installment in a series on this topic. Look for the next in the December issue of PNV.

In today's hog operations, sows are giving birth to continuously larger litters, and this trend does not seem

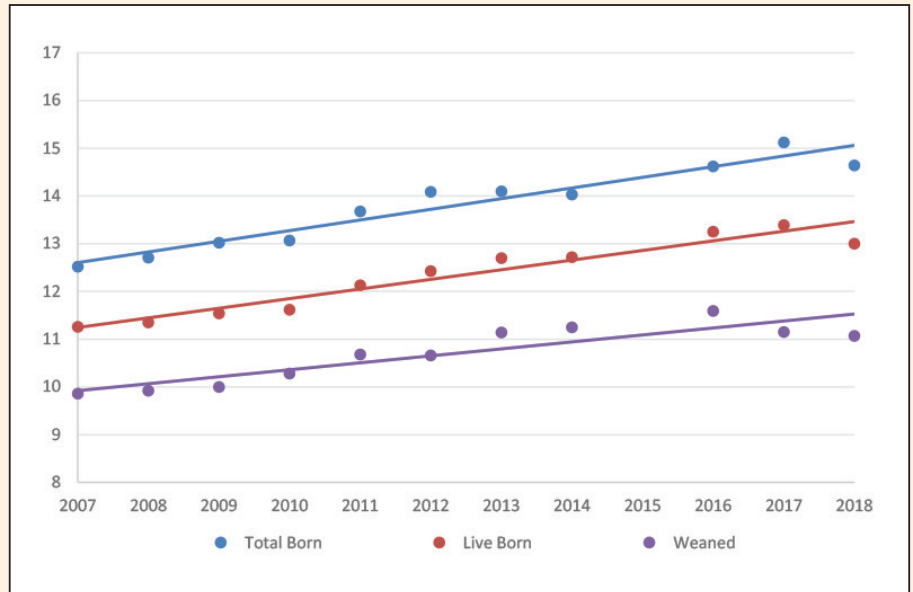


Figure 1: Average number of piglets born total, born alive and weaned per litter in Canada between 2007 and 2017 (2015 data not available). Source: PigCHAMP Statistics (www.pigchamp.com)

to be slowing down (Figure 1). Early pig care, especially of high risk (low birth weight) piglets is even more important as litter size steadily increases. The sows' uterus has a specific capacity. This means that larger litters have the same amount of space as smaller litters, leading to decreased average piglet birth weights as litter size increases (Wiegert and Knauer, 2017). Piglets born at a lower birth weight are automatically disadvantaged and continue to be so throughout development. Higher birth weight piglets grow at faster rates (Devillers et al., 2011), and for every 1 lb (0.45 kg) increase in birth weight, there is a 2.8 lb (1.27 kg) increase in weaning weight (Wiegert and Knauer, 2017). Low birth weight piglets and/or larger litters create a challenge for pork producers to successfully wean all of the piglets. Pre-weaning mortality (PWM) is a major contributor to total death loss from birth to market, and an important factor driving pigs/sow/year (Loula, 2012). In Canada, PWM has been steadily increasing in conjunction with increasing litter sizes (Figure 1). Farms are averaging just under 12%, with many farms approaching or surpassing 20% PWM. The following strategies are

designed to help producers successfully wean these high risk piglets and get them off to a healthy start.

Environment and Management

The farrowing environment should be maintained to help minimize energy losses as much as possible in the first 48 hours of life (Blackwell, 2018). New-born piglets have very low energy reserves and cold piglets spend their energy trying to raise their body temperature, instead of competing for a teat to consume colostrum (Panzardi et al., 2013). A heat lamp should be located behind the sow at farrowing, and piglets should be dried off with a drying powder or towels as soon as possible (Loula, 2012). Once a piglet is dry, place them on a teat to decrease the birth to nurse interval and help them get a healthy dose of colostrum (Tenbergen and Metzger, 2018).

A well-designed creep area should be present in the farrowing crate or pen (Figure 2). These are designed to increase energy conservation, and protect piglets from crushing. The floor of this area should be solid, and an overhead cover (hover) can help prevent drafts. A heat mat or heat lamp should be used to ensure



Figure 2: Well-designed creep area with partial solid floor, a cover and a heat lamp.

Source: Prairie Swine Centre Inc.

the creep area is warm enough. The temperature in the creep area should be set so piglets lay in a “pig and a half pile”, a good indicator that the temperature is neither too hot nor too cold (Blackwell, 2018). Piglets should be trained early on to use the creep area. Once all piglets are born, dry and have eaten, the heat lamp located at the back of the sow should be turned off to encourage piglets towards the heat source in the creep area.

Colostrum

Colostrum is the first milk the sow produces, which is especially rich in antibodies and other immune cells. Unlike humans, antibodies cannot cross the placental membrane to the piglets during gestation, therefore piglets must consume colostrum after they are born in order to receive this essential immune protection from their mothers. Colostrum will transition to mature milk in the first 24h to 48h of lactation, with immunoglobulins decreasing by approximately half in the first 12 hours (Hurley, 2015). The ability of the piglet to absorb these antibodies decreases rapidly as soon as they are born. Piglets can only absorb antibodies in the first 24h of life and 6h after the initiation of suckling their ability to absorb antibodies decreases by

50% (Klobasa et al., 1987). Therefore, the importance of a piglet initiating suckling and receiving colostrum as soon as possible is of the utmost importance. Without adequate colostrum intake the piglet is left with insufficient immunity and will be unable to combat disease. Additionally, piglets that consume more colostrum not only have a better chance of survival, but are heavier at weaning (Devillers et al., 2011).

Piglets need to consume at least 100 ml of colostrum. Research has shown that 60% of piglets do not survive if they consume less than 100 ml (Devillers et al., 2007). With large litters, piglets born later on in the birth order often do not get their fair share of colostrum. Human intervention by moving piglets to the udder can assist later birth order piglets in meeting their colostrum needs (Devillers et al., 2007). Additionally, if low birth-weight piglets have not suckled after the first few hours of life, their energy stores quickly become depleted and they need to be given an energy boost to assist them with suckling. A tube or syringe can be used to deliver (frozen/thawed) colostrum, an energy boost product or a milk replacer to the piglet, which should then be placed at the teat. Energy boost

products may be sugar based, which are fast acting but used up within the hour, or fat and protein based, which work more slowly but last several hours. Milk replacers provide 2-3 hours of energy.

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40 Years Ago in PNV

From the Sep-Oct 1979 issue:
(O.P.P.M.B. Sales Manager has provided information for this article)

Most pork producers are not smiling these days, and rightfully so. Feeder pig prices have dropped from a high of \$1.52 a lb. in February to a low of .53 a lb. in August. It looks like feeder pig prices have bottomed out with prices now at .65 a lb. and prices trending upward.

Market Hog Weekly pooled prices have dropped from a high of \$77.69 in February to a low of \$58.47 in August. There was some added strength in market hogs, week ending August 25th, with a pooled price of \$63.03. The last week of August the pooled price dropped to \$61.05. It would appear that U.S. hog prices have been pulling down Canadian hog prices. Omaha hogs dropped to \$36.00/cwt. in August or $(36 \times 1.25) = \$45.00/\text{cwt.}$ dressed U.S. funds. Week of August 25th, U.S. hog prices exceeded \$40.00/cwt. and were reflected by a spurt in our market prices. Omaha prices appear now to be floundering at the \$40.00 or lower range. Keep an eye or ear on Omaha hog prices; their prices will be reflected in Ontario prices. Some U.S. forecasters are predicting a \$30.00 or less market in October. We are not this pessimistic and feel Ontario market hog prices will range in the \$55.00 to \$60.00 range in September-October.



2019 Ontario Monthly Hog Market Facts

Compiled by Jaydee Smith, OMAFRA

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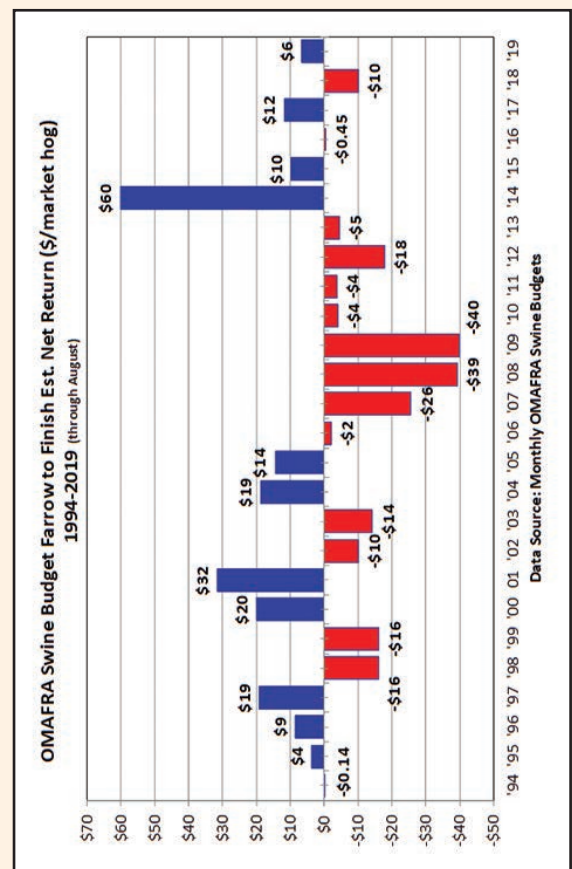
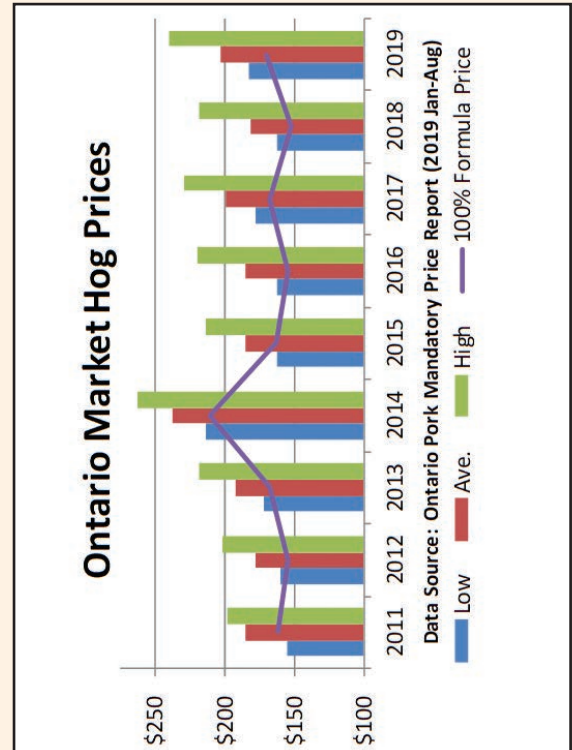
Month	1st 6 mo.	Jul '19	Aug '19
100% Formula Price (\$/c/kg, 100 index)	\$165.85	\$172.86	\$189.53
* Same Month - Previous year	\$156.78	\$188.54	\$132.86
Average price (\$/c/kg, DW total value)	\$200.97	\$196.06	\$217.58
Low price (\$/c/kg, DW total value)	\$178.97	\$179.19	\$199.71
High price (\$/c/kg, DW total value)	\$239.23	\$226.96	\$248.14
Ontario Market Hog Sales	2,661,881	380,306	478,093
*% Change Same Weeks - Previous Year	5.20%	-0.80%	-7.40%
Average Carcass Weight (kg)	103.8	102.26	101.44

Weaned Pigs (\$/pig, 5 kg)**Formula	\$43.12	\$44.95	\$49.28
Feeder Pigs (\$/pig, 25 kg)**Formula	\$68.42	\$71.31	\$78.18
Value of Canadian Dollar (US\$)	\$0.75	\$0.76	\$0.75
* Same Month - Previous year	\$0.78	\$0.76	\$0.77
Prime Interest Rate at End of Month	3.95%	3.95%	3.95%

Corn (farm price) - \$/tonne	\$204.71	\$245.62	\$231.18
* Same Month - Previous year	\$185.35	\$186.27	\$196.93
Soybean Meal (Hamilton + \$20)-\$/tonne	\$500.96	\$511.23	\$481.25
* Same Month - Previous year	\$545.40	\$544.81	\$529.22
Corn - Western Ontario Feed - \$/tonne	\$218.29	\$257.90	\$248.85
* Same Month - Previous year	\$199.56	\$200.02	\$209.03
DDGS FOB Chatham/Sarnia/Alymer (\$/tonne)	\$191.42	\$191.75	\$191.50
* Same Month - Previous year	242.28	\$214.00	\$194.20

Summary of OMAFRA Swine Budget (\$/pig, Farrow to Finish)

Value of Market Hog	\$193.08	\$198.39	\$215.60
Feed Cost	\$119.57	\$122.65	\$123.95
Other Variable Costs	\$45.06	\$44.91	\$44.76
Fixed Costs	\$24.55	\$24.55	\$24.55
Total Costs	\$189.18	\$192.12	\$193.27
Net Return	\$3.90	\$6.27	\$22.33



Income (\$/pig)	Farrow to Wean	Nursery	Grow-Finish	Farrow to Finish
Market Pig @ 101% of Base Price \$189.53/ckg, 110 index, 101.44 kg plus \$2 premium				\$215.60

Variable Costs (\$/pig)				
Breeding Herd Feed @ 1,100 kg/sow	\$13.84			\$15.18
Nursery Feed @ 33.5 kg/pig		\$16.52		\$17.41
Grower-Finisher Feed @ 283 kg/pig			\$91.36	\$91.36
Net Replacement Cost for Gilts	\$2.10			\$2.30
Health (Vet & Supplies)	\$2.16	\$2.10	\$0.45	\$5.03
Breeding (A.I. & Supplies)	\$1.80			\$1.98
Marketing, Grading, Trucking	\$0.95	\$1.60	\$6.01	\$8.74
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	\$0.32	\$0.40	\$1.37	\$2.14
Total Variable Costs	\$32.06	\$24.56	\$107.67	\$168.71

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	\$13.84	\$16.52	\$91.36	\$123.95
Other Variable	\$18.22	\$8.04	\$16.31	\$44.76
Fixed	\$7.42	\$3.59	\$12.64	\$24.55
Total Variable & Fixed Costs	\$39.48	\$28.15	\$120.30	\$193.27

Summary	Farrow to Wean	Feeder Pig	Wean to Finish	Farrow to Finish
Total Cost (\$/pig)	\$39.48	\$69.24	\$149.97	\$193.27
Net Return Farrow to Finish (\$/pig)				\$22.33
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) includes 101% Base Price & \$2 Premium				\$169.72
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) excludes 101% Base Price & \$2 Premium				\$173.20

This is the estimated accumulated cost for a market hog sold during the month of August 2019. The farrow to wean phase estimates the weaned pig cost for March 2019 and the nursery phase estimates the feeder pig cost for May 2019. For further details, refer to the "2019 Budget Notes" posted at <http://www.omafra.gov.on.ca/english/livestock/swine/finmark.html>.

STRATEGIES FOR MAXIMUM PROFITABILITY

by
DREW WOODS

As market conditions and input costs fluctuate, farmers may have to rethink their production strategies.

In the pork industry, we must balance the costs associated with animal-rearing such as facility and feed prices, market conditions and the biology of the animal itself. Given the complexity – and often volatility – of each of these factors, we typically cannot rely on a single strategy to set ourselves up for success.

Rather, we may have to adjust our production strategies based on shifts in one of these factors or interactions.

Thankfully, we can use models to optimize for multiple scenarios and examine which production strategy is best, whether it be maximizing a biological response such as average daily gain (ADG) or feed to gain (FG). These strategies maximize the efficiency of the animal for either rapid growth or best use of feed inputs.

We can also consider economic optimization, seeking solutions that yield the best results for either margin over feed cost (MOFC) or net profit, provided detailed financial data is available.

When pig prices are low and/or feed costs are elevated, it makes more sense to focus on biological outcomes in order to maximize the efficiency of the animal.

Specifically, when feed prices are high, FG becomes the primary concern. By focusing on this metric, farmers can raise animals with minimal feed inputs and reduce costs.

But we must remember that diets that drive feed efficiency are typically more energy dense and have higher upfront costs per metric ton. Typically, however, diets that drive feed efficiency yield better results that more than offset the cost of the feed.

For producers who are facing lower pig prices or have constraints on their facilities such as a fixed time for animals to remain before marketing, focusing on ADG is the way to go.

This approach allows farmers to raise pigs that reach market weight as

soon as possible to reduce the costs of rearing. In the process, pork producers often gain more profits and meet the goal of turning over a barn within a set time frame.

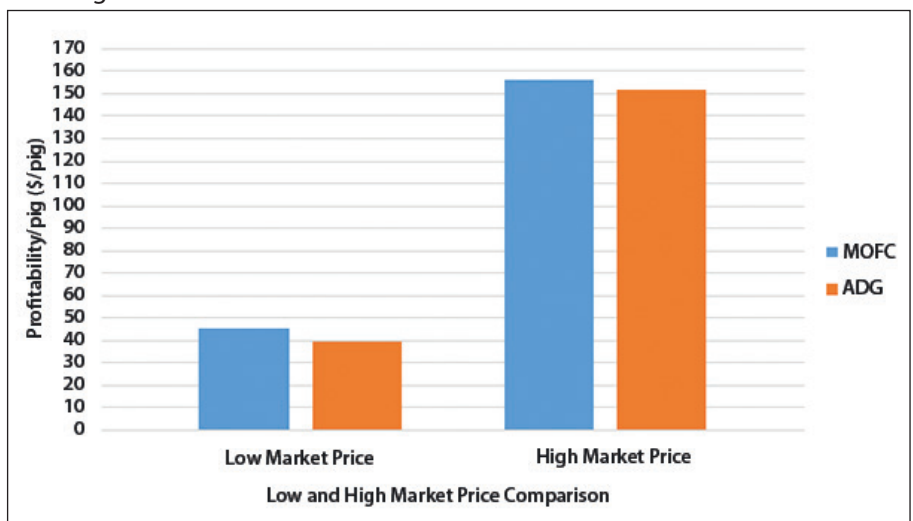
This metric is of particular interest to integrated producers who provide commodity pork and want to maximize throughput not only of their farms but also of packing facilities.

Table 1: Optimization results for MOFC and ADG, using an integrated swine model.

	Margin over feed cost (MOFC)		Average daily gain (ADG)	
	Low price	High price	Low price	High price
Ship Wt (kg)	135	135	135	135
Days in barn	124.8	123.8	119.4	119.4
Net energy (MJ/kg)	10.7, 10.3, 10.3, 10.1	10.3, 10.3, 10.3, 10.1	10.5, 10.2, 10.2, 10.1	10.4, 10.2, 10.2, 10.1
SID Lys. (%)	0.78, 0.76, 0.72, 0.64	0.81, 0.77, 0.73, 0.64	1.2, 0.92, 0.82, 0.65	1.19, 0.93, 0.81, 0.65
ADG	892	902	955	955
MOFC	45.27	156.3	39.04	151.71
FG	2.77	2.79	2.81	2.82

Despite having a significantly lower diet composition and ADG which resulted in a slower time to market, producers' best option to maximize profits in the current market is MOFC.

Figure 1: Profitability per pig of optimized programs for ADG or MOFC, using an integrated swine model.



When we compare the profitability per pig between the programs optimized for MOFC or ADG, it is evident that MOFC provides the larger payback to producers in the current market.

PRODUCTION STRATEGIES

We need to consider further strategies under the current market situation, however.

Global pig prices are surging due to the massive effects of African swine fever on the world's pig inventories. With the resulting high pork prices, producers' first thought is often to get pigs to market as fast as possible but this strategy does not always yield the best payback.

We are also dealing with normal or

even high feed costs.

Considering the combined factors, rather than focusing on quick turn-overs in our barns, it makes more sense to focus on margins.

When dealing with an MOFC or net profit situation, we must remember that these strategies consider financial factors that are absent in previous scenarios. These factors include packer grid or marketing schemes, which influence payments

on the animals, as well as potential facility costs.

When we incorporate these elements into our decision, it becomes very clear that the best option is to target slower growth and feed a lower-cost feed. This reduction in animal growth, feed costs, etc. balances out and creates an environment that can reap the maximum payback.

On page 41, I provide an example from Trouw Nutrition's NutriOpt swine model, which considers such factors as economics, feed, and animal biology to find the best possible outcomes.

Table 1 shows optimal outcomes for both high and low pig prices, as well as biological (ADG) or economic (MOFC) outcomes when evaluating the best payback for the producer.

The trend of lower growth rates and more time in the barn coupled with less dense diets have proven advantageous.

Figure 1 shows the breakdown of margin between MOFC and ADG optimization for both high and low pig prices. In both scenarios, it is evident that – with the current feed costs – it is best to focus on economic returns rather biological outcomes, regardless of pig price.

Should feed costs change, we would have to review this relationship, as it is simply a picture in time of the current market situation.

Striking a balance between all these moving parts is difficult but tools like integrated swine models make it much easier for us to evaluate our options.

By consulting with experienced industry experts, we can determine what outcomes the market and producer situations are dictating. While no one-size-fits-all-solution exists in a complex industry like pig farming, we can create customized solutions for all producer types. **BP**

Drew Woods, M.Sc., has worked for 10 years at Trouw Nutrition Canada as a swine nutritionist and now as a technology specialist. He holds a B.Sc. in animal science and an M.Sc. in animal nutrition from the University of Guelph.



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by
ADAM
VERVOORT

A GUIDE TO MEETING WITH YOUR AG BANKER

Producers should come prepared with solid business plans to help set themselves up for success.



Jelkoi/istock/Getty Images Plus photo

When working with a bank, it's important to find one that will be a partner for you – going beyond the spreadsheet to understand your business.

In the Canadian ag industry, we see two major trends unfolding: a declining number of agricultural operations and a more capital-intensive business environment. It's more difficult than it used to be to get a farm operation started and to keep it going.

As well, hog farmers face unique challenges like the price of corn, the availability of feed byproducts, unpredictable weather patterns, fluctuating market rates, and environmental concerns.

As operators face these headwinds and look to grow their businesses, they should place heightened importance on the financial and business sides of their operations.

This process starts with creating a business plan.

The business plan

This plan serves as the foundation of any operation. In your plan, it's important to outline strategies to grow the operation, as well as what you'll do if and when you succeed.

You should also view your business plan as a living document. External pressures that cannot be accounted for up front will often emerge. As these issues surface, you should update and change your business plan accordingly.

Your plan should also capture a holistic view of your operation's journey – including what you need to know at the beginning all the way to what you need to sell or pass the operation on to family members.

When developing a plan, it's a good practice to ensure that the document covers the following five areas: management, markets, capital investment, cash flow and profitability. Your bank will use these criteria to evaluate the business's ability to generate cash, identify any potential threats to cash flow in daily operations and in the industry environment, assess repayment capability, and analyze any risks.

The business plan is also a crucial component in any meetings with your banking partner. This document will

serve as the foundation to conversations about the farming operation and what you can do to help it grow and keep it growing.

In my experience, farmers typically ask financial experts how they should be thinking about short- and long-term financing and then how they can better manage cash flow.

Short- versus long-term financing

When working with a bank, it's important to find one that will be a partner for you – going beyond the spreadsheet to understand your business. This strong relationship can prove beneficial for fostering insightful conversations and finding financing options that will shape your operation.

On the financing side, the best place to start is assessing the business needs of the operation. Short-term financing is designed to support short-term cash needs. Short-term options tend to be fast and flexible. On the downside, this financing may

cost more over the long term.

A line of credit is a good example. It can provide a hog operation funding when needed and can be paid back when you have a surplus of cash. This type of loan should be used when necessary to help manage day-to-day expenses.

Long-term financing is the opposite. It helps conserve cash flow and working capital and enables easy planning with regular monthly

payments. But this type of financing is neither fast nor flexible.

A term loan is an example of long-term financing. It provides cost-effective solutions to fund opportunities like purchasing machinery or land, or making building repairs or renovations. This financing helps a growing operation.

The type of financing farmers choose depends on where their operations are in the business lifecycle

and what the operations' business needs are. Newer businesses, or those operations that have recently expanded, will typically need more short-term financing to cover investments in inventory when compared to more established businesses.

Managing cash flow

Good cash flow is key to a healthy and successful farming operation. Hog producers, perhaps more so than individuals in other ag sectors, sometimes find cash flow to be challenging because of external forces.

Successful managers tend to fully understand their costs of production, cash flow requirements and appropriate risk management strategies. You'll always want to have cash available for the business – whether in the form of cash on hand or an operating line with sufficient capacity to handle periods of limited cash flow.

Poor cash flow can mean late or missed loan payments, overdue bills and increased operating debt.

A good practice is to draw up a cash flow statement which you can use to get a picture of cash on hand, revenue and monthly expenditures. The cash flow statement will highlight any potential shortfalls (or surpluses) in advance so they don't come as surprises or so that money can be reallocated. Ultimately, this information will help you improve the overall liquidity of your business.

Your lender should understand that the hog industry is cyclical, profitability can be volatile at times, and cash requirements are typically the highest in the summer months for crop inputs for producers growing feed.

When thinking about the long-term growth of an operation, keep in mind the importance of a business plan. This document will lay the foundation for the type of financing the operation requires. As well, good cash flow management will ensure a business's long-term success and help operators head off any potential headwinds. **BP**

Adam Vervoort is the head of agriculture financing at BMO Bank of Montreal.

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KANSAS FIRE SHOOK U.S. LIVESTOCK MARKETS

The incident suggests that, when necessary, packing plants can ramp up production.

Periodically, we receive stark reminders of how much the various livestock markets can influence one another.

On Aug. 9, a fire severely damaged the Tyson Foods beef processing plant in Holcomb, Kansas. While this incident clearly has ramifications for the beef sector, ripple effects could be felt throughout the livestock markets.

This plant harvests about 27,000 to 30,000 head of fed cattle per week, which is roughly 5 to 6 per cent of the total American weekly fed cattle slaughter. The fire caused a complete and indefinite shutdown of the plant.

It was like a hurricane or tornado hit the industry.

With this major beef-packing facility going offline, market analysts feared a significant glut of cattle could occur. Such an oversupply could cause a backlog across the entire industry.

The live and feeder cattle near-month futures dropped to their daily low limit on Aug. 12, when the futures market opened after the Tyson plant fire.

This event highlights how concentrated the U.S. beef-packing industry is, since the fire had such ramifications on the cattle market. Most of the U.S. beef-packing operations are consolidated and run by a few big meat-packing companies.

In contrast, the pork-packing industry is not as concentrated, which is helpful in managing the market aftershock following similar packing capacity disruptions. Due to the porcine epidemic diarrhea event of 2014, for example, which caused a tremendous increase in pork prices and strong gains for packers, the U.S. pork-packing capacity expanded significantly to handle the increased production hogs.

Despite market fears, Tyson said it will rebuild its plant. Immediately after the fire, the company announced it will continue paying full salaries to



The pork-packing industry is not as concentrated as the beef-packing industry, which is helpful in managing the market aftershock following packing capacity disruptions.

its staff to avoid a labour shortage when the plant comes back online. Clearly, Tyson intends to get the lost capacity running again as soon as possible.

Initially, cattle market participants assumed that other beef-packing plants would not have the capacity to increase their processing rates.

In reality, cattle packers have more leverage. Solid demand kept packer margins strong at US\$300 to US\$350 per head or higher.

Historically, beef-processing plants have worked at 91 per cent of capacity utilization. In some instances, the sector has reached 95 per cent capacity.

After the Tyson fire, the U.S. cattle slaughter levels did not drop as much as some analysts had feared. Rather, the other packing plants increased their processing numbers and will likely run more shifts to accommodate the increased numbers.

The wholesale beef market remained very strong and the packer margins are through the roof, which are supportive factors for cattle demand. Cattle futures have since

stabilized, too.

If a similar production mishap happened in the pork industry, with about 5 to 6 per cent of the weekly hog-slaughter capacity going offline, producers could expect the same immediate knee-jerk reaction to the downside in futures prices. But the wider setup of the U.S. pork-packing industry would enable hog futures to turn around much faster.

Like in the cattle industry, pork packer margins are also strong. This economic situation would encourage the other functional packers to schedule extra shifts and make up for the lost slaughter capacity.

In turn, these developments would keep packer demand for pigs steady and help to stabilize hog futures. **BP**

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



by
**RICHARD
SMELSKI**

TEAM EFFORT HELPS TO IDENTIFY BOTTLENECKS

If you accept insights from your peers, it's easier to resolve bottlenecks and other business challenges.



Aumsama Foto/iStock/Getty Images Plus photo

Every farm has a logistical bottleneck to resolve and recognizing that challenge is the first step to achieving goals.

One of the more exciting gatherings I ever organized was having five owner-managers of larger sow operations tour each other's farms.

A veterinarian attended a few tours to set some protocols and share some advice, but the visits were basically producer to producer.

The agenda was simple. We began by touring the farm and taking note of the designs and management. Next, we had lunch. (After all, we believe satiety prevents tail biting.) Then, each manager shared what he or she saw.

Each producer had to discuss what he or she thought was the best part of the operation and areas for improvement. All owner-managers had to share production records and adhere to confidentiality.

The first meeting was quite congenial but, as each visit proceeded, the discussions increased in intensity. These meetings became more than entering biosecure areas. The gatherings proved to challenge participants' mindsets.

It was interesting to watch the dynamics and observe each manager's attention to detail. Often, the producers had different perspectives. Areas of focus ranged significantly, encompassing such topics as biosecurity protocols, hydro usage and employee safety.

Each producer had a different perspective but, interestingly, participants raised some of the same concerns in each operation. Farmers looked at issues of time management, cost of inputs and health controls.

Some comments certainly stand out in my mind.

"Let's not blame the price, the government or the Prime Minister. You cannot control the waves but you can control the surfboard," one producer said.

"It's the ability to keep learning from others and knowing that you don't know," another farmer shared.

"When I have made my biggest mistakes, it's because I went into the situation with a preconceived idea of what the right way was and I wasn't really open to hearing other perspectives," a participant admitted.

"It's about that willingness and ability to listen and learn, and to not be so enamoured with your ideas that you don't hear or learn from others," another manager added.

All five owner-managers saw the operations through their own eyes and beliefs, imposing their styles and priorities in each operation. Each participant needed to take a step back and see how he or she could accept outside suggestions.

In the process, I recognized that participants' goals were often the

same. But the owner-managers' paths were different. No one textbook could work for everybody.

To encourage discussion, I often asked "Where was the bottleneck in this operation?"

Every farm has a logistical bottleneck to resolve and recognizing that challenge is the first step to achieving goals. Often, it is easier to identify than resolve the bottleneck.

But, through these meetings, producers identified and started to address their bottlenecks. This process isn't a one-time fix, however.

Often, once you resolve one bottleneck, you'll find another creeps up in a different part of your operation. As a result, we should regularly analyze the bottlenecks in our farms and address these constraints to enable maximum efficiency.

In the course of our sessions, these owners quickly realized that their neighbours were not competitors. By pooling resources, farmers could tackle the bigger bottlenecks.

These meetings were one method of instigating a different view of bottlenecks. The gatherings also encouraged producers to rethink their mindsets. **BP**

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

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