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## Jumping into the world of marketing

I must admit – I’ve always found agricultural marketing to be a bit daunting. There’s an array of specialized terms to keep straight – like bullish, bearish, cutout values and managed money funds.

But, of course, a solid understanding of the markets, as well as the local and international trends and opportunities, helps to shape agricultural incomes. We want to sell our commodities at the strongest prices to offset whatever Mother Nature has in store.

Recently, I’ve pushed myself to try to overcome my fear of marketing. I’ve taken a few training sessions offered by a specialist colleague at **Farms.com**. (*Better Pork* is part of the Farms.com group of companies.) My sister and I are diving in this year on the home farm, helping our father develop our marketing plans.

Our *Better Pork* features this month, too, focus on the topic of marketing. In the main feature, writer **Nicholas Van Allen** explores some of the specialty markets within Canada. He delves into the complex world of label claims for pork. He explains the standards applied to such claims as organic and “raised without the use of added hormones.”

In the second feature, writer **Jennifer Jackson** takes us beyond our national borders to discuss international markets for Canadian hogs and pork. She highlights the growth of these markets and identifies the main importers of our products.

I hope you enjoy the current edition of *Better Pork*. And, as always, please do not hesitate to get in touch if you’d like to discuss trends and developments in our industry. **BP**

ANDREA M. GAL

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**At John Top’s organic farm, in Salford, Ont., hogs get plenty of space to move about, even when indoors. See “Label claims for the 98 per cent” on page 6.**



## Importing viruses via feed

Imported feed ingredients for pigs may be the perfect vehicle for unwanted hitchhikers.

Researchers have found that viral pathogens can travel across borders, catching a ride with imported feed products from high-risk countries, according to **Scott Dee**, DVM and director of research at **Pipestone Applied Research**.

In 2013, Porcine Epidemic Diarrhea (PED) arrived in North America for the first time – prompting questions about how the virus spread.

Because of similarities between the North American and Chinese strains, Dee looked at feed as a potential risk.

“Originally, we were told viruses were not going to cross the ocean,” says Dee. After mimicking similar travel conditions, Dee and his team found that “certain ingredients in swine feed can harbour the virus longer – the virus can survive for 180 days in soybean meal, for example.”

“These findings are not meant to fear monger – we are not done with the work yet,” he says.

**Doug MacDougald**, DVM and member of the **Ontario Swine Health Advisory Board** and **Swine Health Ontario**, echoes these thoughts.

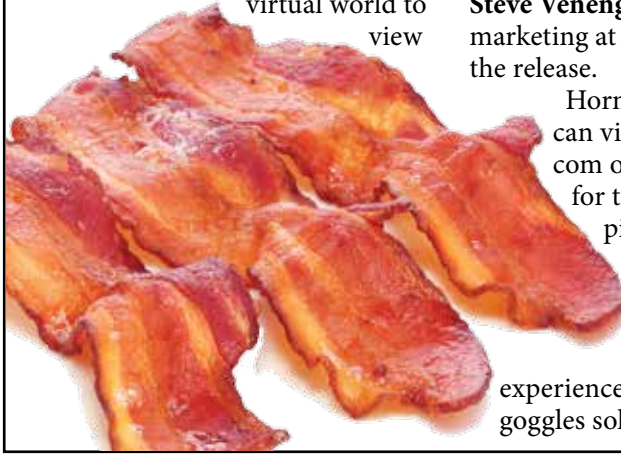
“The U.S. and Canada have a high level of regulations in place (for disease prevention). This just expands the scope of discussion and investigation of what else we need to be looking at,” he says. **BP**

## Shopping for bacon in virtual reality

Just when you thought bacon in real life couldn't get any more exciting, you can now try shopping for bacon in virtual reality.

**Hormel Foods** recently introduced *The Black Market* – “a multisensory bacon experience designed to launch consumers on a quest in a world of bacon,” according to a company release.

Users can “travel” through the virtual world to view



and search for distinct bacon flavours such as brown sugar or premium jalapeno. Based on their virtual “discoveries,” users can also purchase and ship real bacon.

“We're proud to advance our mission of celebrating the exceptional, pushing bacon forward and bringing better bacon into more homes with new distribution channels and buying experiences,” **Steve Venenga**, vice president of marketing at Hormel Foods, said in the release.

Hormel explained users can visit [BlackLabelBacon.com](http://BlackLabelBacon.com) on their smartphone for the best virtual shopping experience.

The company did offer bacon-scented goggles for an enhanced viewing experience, however these goggles sold out quickly. **BP**

## Canadian pork industry hoping TPP won't be DOA (dead on arrival)

With **Donald Trump** threatening to kill the **Trans-Pacific Partnership** (TPP), a trade deal signed in Feb. 2016 by 12 countries – including Canada and the United States – which cover 40 per cent of the world's economy, the Canadian pork industry could take a big hit.

According to an analysis conducted for the **Canadian Pork Council** (CPC), the Canadian pork industry would increase its exports by \$300 million once the TPP is fully implemented.

“This agreement stands to eliminate burdensome tariffs and level the playing field,” said **Darcy**

**Fitzgerald**, executive director of **Alberta Pork**.

While everyone is hoping for the best, surviving in the pork industry means preparing for the worst.

“Given the uncertainty right now, it's conceivable that

TPP partners could start side deals,” said

**Gary Stordy**, public relations manager for the CPC.

“The Canadian pork industry will lose if Canada ignores that possibility and fails to show interest in joining the conversation. Our industry considers TPP a priority, but we would also encourage the federal government to have a backup plan.” **BP**





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# LABEL CLAIMS FOR THE 98%

Barely 2 per cent of Canadians are agricultural producers and 98 per cent are consumers. Today, that 98 per cent increasingly asks for specialty products: organic, rustic, DHA-enriched, raised without antibiotics, raised without added hormones or others. *Better Pork* looks at these products and the label claims attached to them and aims to understand their role in pork production.

by NICHOLAS VAN ALLEN

Hog farming has been improved in the past few years. In conventional facilities like this one, producers are working hard to use antimicrobials more responsibly, with greater oversight from veterinarians.





**Commodity hogs are not always appropriate for “free range” pig farming, as they might sunburn if outside for too long, says Katie MacDonald, specialist in pork production systems and the pork value chain.**

The Canadian Pork Council, in a 2015 publication titled *Priority Areas for Strengthening the Canadian Pork Industry*, noted that “in recent years, the Canadian pork industry faced growing social pressures, particularly in the areas of animal health and welfare, the environment and genetically modified organisms (GMOs).”

But where are these pressures coming from?

Julie Lamontagne, communication adviser at duBreton, a Quebec-based producer of organic, rustic and raised without antibiotics pork, put it quite simply. When asked in a telephone conversation about the origin of the company’s label claims, she said, “Consumers want to feel good about eating meat.”

That’s what these label claims are

often about.

They come from consumers who want to pay for them, from the industry that seeks to market them and from farmers who realize that the production of specialty pork can make a farm, even a small one, viable.

**The problem with label claims**

There are so many label claims floating around – some of them overlapping – that there is a lack of understanding about which ones are which, what they do and how they work.

True Foods, a governance company based in Cambridge, Ont., which verifies label claims for producers, features 13 such claims on its website. (True Foods is part of the Grand Valley Fortifiers group of companies.)

Heather Ferguson, value chain

manager at True Foods, noted in an interview that, as a governance company, True Foods does not “set any standards themselves.” Instead, the standards they work with come from the producers.

That’s partly why there is such a wide variety of claims. Often, producers and industry develop and apply them on their own, unless the claims themselves are regulated by government (as with organic products, for example).

Some of the label claims True Foods deals with include:

- *Raised without antibiotics:* This claim asserts that an animal cannot have received antibiotics “from birth to harvest,” nor can the animal’s mother, if she were to transfer antibiotic residue to the animal.

**Size matters in specialty pork production**

A few of the label claims call for a certain scale of farm. Not too big, not too small, but just right.

Katie MacDonald, specialist in pork production systems and the pork value chain, for example, argues that for the “humanely raised” label claim to be effective, the farm should be smaller since this size allows for increased monitoring of the animals.

Heather Ferguson, value chain manager at True Foods in Cambridge, Ont., notes that some of the farms that the company deals with are also smaller.

“We try to target a 200-sow farm,” for an organic label claim, she said in an interview.

And True Foods works with a producer who has 1,200

sows to merit the raised without antibiotics label claim.

So some label claims operate best around the 200 mark, but others can allow for larger-scale operations.

One key point: the farms must not be too small.

“You don’t want to be too small,” Ferguson notes, “because then you have the auditing expenses.

“Yes, there are some smaller ones ... but if you have a limited amount of animals, that’s putting the expense in there.”

Farms must be of a minimum size to make the label-claim verification system function economically, but they are also not often very large-scale operations. **BP**

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## Growth of a governance company

True Foods is a Cambridge, Ont.-based governance company which is a testament to the growth of label claims and specialty pork production in the province.

According to Heather Ferguson, value chain manager at True Foods, the company's job is to ensure "that whatever label claims are stated on the package is what's in the package.

"We make sure it's governed from farm to shelf."

True Foods works "at the farm level, the auditor level, (with) different paperwork within the packing plant, (with the) document trail to CFIA, etc."

True Foods is part of the Grand Valley Fortifiers group of companies and has been operating for "two years as an actual company," though Ferguson notes that the governance system itself existed previously under Grand Valley Fortifiers.

True Foods works with producers such as Paul and Rosie Hill of Willowgrove Hill farms in Mitchell, Ont., who produce DHA-enriched pork and John Top of Salford, Ont., an organic pork farmer.

Farmers like the Hills and the Tops "come to me," says Ferguson, "with a set of ideals that they want met ... I

go through those ideals ... to make sure that all those are attainable or reasonable."

Ferguson notes that "farmers want to be on value chains ... because either they agree with whatever the claims are ... or they want to get a premium, so all the value chains basically have a premium associated with them."

For consumers, True Foods provides transparency. "We are completely transparent ... if someone wants to ask a question, we will give them the details."

True Foods works with Loblaw's supermarkets, helping the company with their PC® Free From™ label claims. This line of products features meat raised without the use of antibiotics and hormones. PC® Free From™ includes chicken, turkey, pork, beef and even bison, according to the President's Choice product website.

One of the next steps for True Foods is to expand. "We are currently working on trying to expand value chains out west," Ferguson noted in the interview.

It's only two years old as a company, but True Foods is already destined for Prairie expansion. **BP**

- *Raised without the use of added hormones:* An animal cannot have received hormones in any way, including through the animal's mother.

- *No animal by-product:* Feed must be free of "ingredients or components of animal origin"

- *Raised without growth promotants:* Growth promotants cannot be given to an animal from birth to harvest.

- *Vegetable grain fed/grain fed:* This claim means that animals can only be fed a diet of grain and that no ingredients have an animal origin.

- *Organic:* Animals must follow the organic-farming requirement and be "certified by an agency accredited by the Canadian Food

Inspection Agency (CFIA)," according to the True Foods website.

- *Raised with a conscience:* This claim generally means that animals were "raised in humane and low-stress environments."

- *Contains nutritionally enriched DHA omega-3:* This label pertains to meat enriched with DHA (the omega-3 fatty acid) through the use of DHA-rich animal feed.

For this label to have meaning, fatter cross-breed pigs are used since DHA is stored in the intramuscular fat. At Willowgrove Hill farms in Mitchell, Ont., where this DHA-enriched pork is produced, they use a cross between the Topigs 20 female and the Topigs Tempo terminal sire.

Overall, these label claims are an





**Heather Ferguson is the value chain manager for True Foods, a governance company that is part of the Grand Valley Fortifiers group of companies.**

example of the variety of those offered by different farms and producers from which consumers may choose.

Another growing and popular label claim concerns the

housing of pigs, particularly their ability to access the outdoors or freely move about.

Label claims such as “free range” or “pigs raised outside” fall under this category.

Katie MacDonald, specialist in pork production systems and the pork value chain, noted in a phone interview that free-range pig farming is generally niche farming. It is not necessarily appropriate for some commodity hogs which would sunburn if they spent too much time outside.

Within the labels of free range or raised outside, there is also some disparity between what those terms imply.

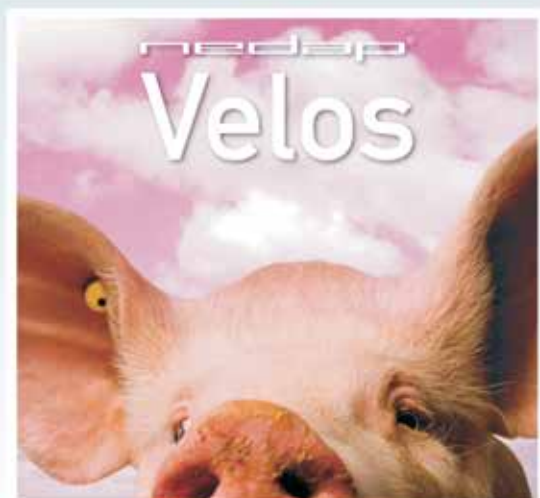
Mary Jane Quinn, former manager of communications and consumer marketing at Ontario Pork, said in an e-mail that Ontario Pork is often asked if its pork is free range. But “this is a phrase that has very little standards or regulations around it.”

MacDonald said that sometimes the free-range or raised-outside label claims mean that pigs were allowed outside on mud or on grass and that some farmers reduced the herd size so that the pigs raised outside had continued



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**True Foods, part of the Grand Valley Fortifiers group of companies, is located in Cambridge, Ont.**

access to shrubbery. The farmers felt that the label claim implied the ability to forage outside.

The large variety of label claims and their differing interpretations have created a marketplace without a great deal of coherence and led to the spread of misconceptions.

**Continued misconceptions**

While some companies like True Foods have transparently provided

specific information about their label claims, misconceptions about some claims made by other companies remain among farmers and consumers. For example, one misconception involves the issue of hormones and farm products.

The CFIA notes on its website that “in cases where the use of hormones is prohibited or not authorized, the claim ‘raised without the use of added hormones’ may be considered

misleading as it creates false uniqueness between similar products.” (To its credit, True Foods recognizes this misconception as an issue on its website.)

In other words, consumers could think that the pork loin they just bought and paid a premium for is free of added hormones, whereas others are not.

Many consumers also do not know just how much work has been done to improve hog farming, particularly regarding the use of antibiotics, in the past couple of years. While some consumers may think that they need to buy “antibiotic free” pork products to obtain meat from farmers who use antimicrobials responsibly, this belief is not necessarily true.

The Canadian Pork Council, for example, noted in its 2015 publication that despite the fact that “today’s farms by necessity raise more animals than those in the past,” Canadian pork farmers are working hard to “produce safe food while reducing the need for antibiotics.”

The industry is working to “devel-



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## Organic farming: A profile

Organic farming is one of the most rigid modes of farming in terms of regulation and certification.

According to the Canadian Food Inspection Agency's (CFIA) website, "Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with the environment."

Organic farming includes the principles of health, ecology, fairness and care.

Organic agriculture sustains and enhances the health of the soil and the planet, is based on the cycles of ecological systems, supports relationships "with regard to the common environment and life opportunities" and operates in a responsible manner, protecting and

caring for the "health and well-being of current and future generations and the environment."

Organic farmers must maintain records that describe "inputs and details of their use, production, preparation and transport of organic crops, livestock and products," according to the CFIA. They must "fully record and disclose all activities and transactions in sufficient detail to be easily understood and sufficient to demonstrate compliance with this standard."

One example of the regulations that apply to pork producers: organic farming requires that "the number of animals on a production unit shall reflect the size of the available land-base." In essence, "farrow to finish operators shall not exceed 2.5 sows/ha (1 sow/ac)."

Operators must also give pigs access to the outdoors, which may include exercise areas, woodlands and even pasture. **BP**

op options to strengthen the veterinary oversight of antimicrobials use in food animals (veterinary prescription for antimicrobial drugs in water and veterinary authorization for antimicrobial drugs in feeds)."

The publication also noted that "enhanced surveillance systems to



**At John Top's organic farm in Salford, Ont. hogs get plenty of space to move about, even when indoors.**

monitor antimicrobial use and resistance, attention to alternatives and continued focus on prudent use are critical."

### Farm viability: Top Farms

Despite the ongoing misconceptions and lack of clarity about some label claims, many farmers are choosing to incorporate them into their farming strategies.

Katie MacDonald noted that some farmers see label claims "as an opportunity to step away from commodity pork and command a better price for their hogs."

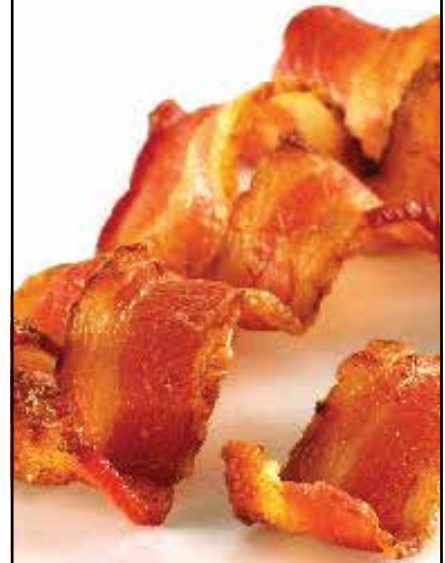
This thought is seconded by Heather Ferguson of True Foods.

"What we are really wanting them (farmers) to understand right now is that a lot of our value chains are now becoming five-year contracts," Ferguson said. "So, really, even if you don't buy into organic, it really doesn't matter what's important to you. It's what's important to the mass customers, and there is a market for this."

She continued: "So if you can

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## LABELCLAIMS

produce a cost of production plus a premium, you are making your farm viable.”

Such farm viability has been achieved on the ground, in real ways.

Ferguson cited John Top, of Top Farms, in Salford, Ont.

According to Ferguson, Top and his son farm 130 sows, farrow to finish, and recently shifted from conventional hog farming to organic farming, with the assistance of Grand



**Sows feed on grass in a pasture area just in front of the barns at John Top's Salford, Ont. organic farm.**

Valley Fortifiers.

“First, I thought it was not possi-

ble,” Top notes in an informational video. “But we threw some numbers around, and we talked to the book-keeper, to the banker, we got financing in place, and they (Grand Valley) really supported us in setting up and renovating into the organic market.”

In the end, Top and his investors found that “the organic for the smaller operations was the way to go.”

The shift to organic also allowed Top's son to move home and take up hog farming as well.

“Our son came home full time,” Top says. “He always wanted to farm, (but) in the conventional there was no future. Now, in the organic, we got a real bright future.

“At the end of the day ... I eat my supper with a smile. With the organic, or the humane pork, you will have a bright future.”

### The hullabaloo

When Katie MacDonald spoke with farmers for her research on the pork value chain, she noted that some did not know what all the hullabaloo was about, especially over label claims such as “raised without the use of added hormones” which are already regulated.

But pork farmers produce for an open marketplace, after all. It's what the buyers want that raises demand for specific products. And as political economist Adam Smith would tell us, with demand come price increases.

If farmers want to produce a product with a premium attached to it, they may consider producing what the 98 per cent are asking for: label claims and all.

If it ends with a smile on your face at dinner time, as it does with John Top in Salford, then the payoff is pretty good as well. **BP**

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# Canadian pork valued abroad

Beginning with the management techniques of producers and ending with unique international markets, Canada has a strong export program.

by JENNIFER JACKSON

Canada's hog producers supply arguably some of the highest quality pork products in the world. The quality of the meat and farmers' care of the animals is reflected in Canada's strong presence in the world of export markets.

Canada is the third-largest exporter of pork products and meat worldwide, says César Urias, director, Latin America and government programs management, at Canada Pork International.

"In 2015, Canadian pork exports valued \$3.4 billion," says Urias.

Canada's global position has not always been the way it is today, as we now have numerous dependable export markets, says Gary Stordy, public relations manager at the Canadian Pork Council.

"Historically, we used to be very dependent on the United States," he says. "Over the past 10 to 15 years, Canada has tried to diversify where we ship pork to."

Motria Savaryn-Roy, economist for Export Development Canada, echoes these thoughts.

"Canada's export of hogs, slaughtered animal meat and processed meat has grown at an annual average rate of around 3 per cent," says Savaryn-Roy. "This growth was due primarily to the export of slaughtered and processed meat, as exports of (live) hogs fell somewhat over the same period."

Growth in the global demand for both meat and new markets has opened opportunities for Canadian pork, says Savaryn-Roy.

To Stordy, new markets are always an opportunity to strengthen Canada's position because the possibilities

of market volatility and the decline in exports to a specific country always exist.

"We ship (pork) to well over 100 countries. (Creating a secure environment) is one of the main reasons why we as an industry are very keen on improving market access.

"By creating new trade agreements, or revisiting existing trade agreements, we are allowing our industry to have the flexibility to find where we get the most value," says Stordy.



César Urias

## Export markets

Many countries import Canadian pork, all for differing reasons, and they each select different products.

Japan, Mexico, the United States and China are the major importers of Canadian pork, says Stordy.

"In 2015, Canada exported \$457



César Urias/Canada Pork International photo

On-farm programs such as the Verified Canadian Pork program allows Canada to market safe, quality products.

million worth of hogs to the U.S., where over 97 per cent of Canadian hogs are destined,” says Savaryn-Roy.

The numbers tell a different story for pork products. “Canadian exports of meat (go) to more diverse destinations,” she adds. In 2015, “just over 50 per cent of exports headed to the U.S., 16 per cent to Japan, 10 per cent to China, 6 per cent to Mexico and 3 per cent to South Korea.”

Manitoba had a 23.2 per cent share of Canada’s exported pork by value in 2015, Andrew Dickson, general manager of Manitoba Pork, notes.

“Seven years ago, (Manitoba) would have shipped 57 per cent of our live hogs to the U.S. Now it’s around 45 per cent,” he says. “In 2008, we shipped 2.8 per cent of pork to Mexico. Now it’s around 7.7 per cent. We used to ship 0.4 per cent to China. Now we ship around 5 per cent.

“Canada has established itself as a reliable supplier. The trend is for less and less dependency on the United States and more growth in other markets. (In) Japan and China, for example, demand is growing,” Dickson says.

Japan is a unique market for Canada. “We don’t have the same volume of exports (to Japan as to other markets),” says Stordy. “However, because of the customer’s high standards and demands for quality, we are able to get a better return on that product.”

Dickson also notes the significance of Japan as an importer of Canadian pork.

“Japan’s consumers prize quality and consistency. They like our pork’s meat and fat ratio,” says Dickson. “We design these pigs to meet those requirements with feed. For example, we can feed barley because it gives the pigs a harder white fat, as opposed to the yellow soft fat that feeding corn can give.”

The fact that Japan imports Canadian pork shows that the product is regarded as one of the best in the international marketplace, says Dickson. “Japan can buy worldwide, and (it) choose(s) to buy our product. We look at each of these markets and

see what they require,” he says.

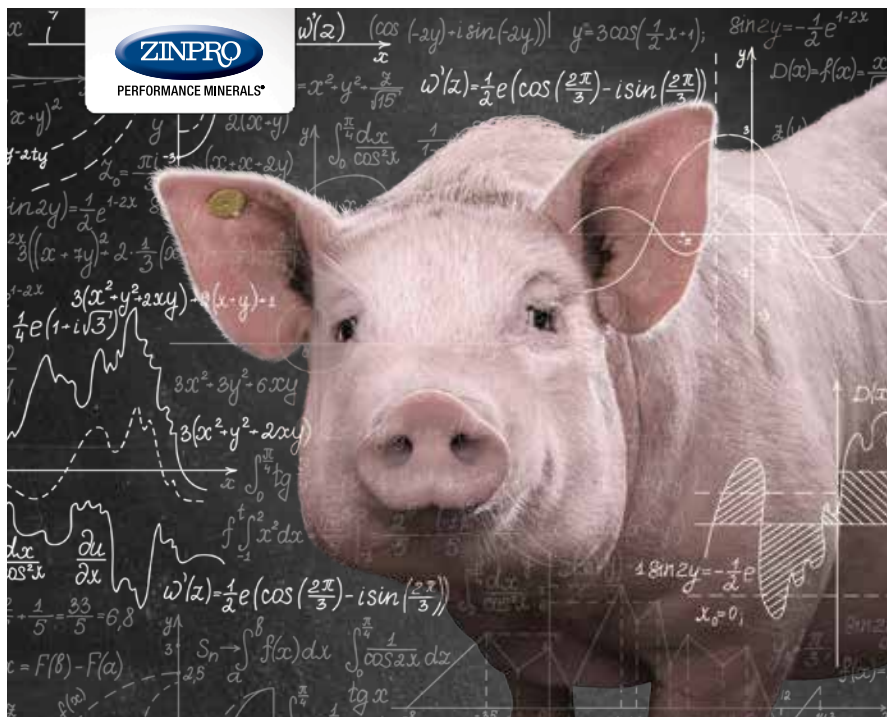
Japan is one of the main targets of exporter HyLife Ltd., says Claude Vielfaure, president of the company. “The (Japanese) are connoisseurs of pork meat. They want high quality and high profile tastes. They are certainly wanting to pay for that.”

China also greatly influenced Canada’s pork exports in 2016, says Ron Davidson, director of international trade, government and media

relations at the Canadian Meat Council. This influence is a result of China substantially increasing its imports.

China’s middle class and standard of living is increasing, so people are choosing to eat more meat products, says Dickson. The country likes Canadian pork’s high quality and Chinese consumers are now willing to pay more for the meat.

“There are cuts of meat that the



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HyLife's Pork Table Restaurant in Japan. The Japanese consumer is a connoisseur of pork according to Vielfaure.

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Chinese want more of because of their uses," says Stordy. "Here, we eat a lot of bacon, (but that's) not exactly what the Chinese market wants. "There has been an increase of bone-in pork products exported to China," he says. "They essentially use these products in their soups."

HyLife, says Vielfaure, knows the importance of recognizing cultural/geographic market demands and supplying the different parts of the pigs to the right markets. It's important "to sell 100 per cent of the pig" he says.

Davidson shares the same thoughts on securing markets for all products. "As markets value particular pork products differently, the key to maintaining competitiveness is identification of the market in the world that will pay the most for each product," he says. Therefore, despite

the variation in the dollar value of the various cuts of pork for the different export markets, "access to every market is highly valued."

"Accordingly, a high-priority objective of Canadian meat packers and processors is securing competitive access conditions for Canadian meat within Canada and to every country in the world."



**Ron Davidson**

**Trade opportunities**

The hog and pork sector in Canada depends on exports for two-thirds of its income, Davidson says. Given this dependence, it is crucial that foreign market access be maintained and that new markets be sought out and developed.

"The negotiation of foreign market access is an exclusive mandate of government; industry is critically dependent upon the allocation of sufficient government resources to this function," he says.





“The industry allocated a very high priority to the Trans-Pacific Partnership free trade agreement that would greatly improve access to Japan, Vietnam and Malaysia. Should this agreement not proceed as intended and rapidly, it is critical that Canada re-engage immediately in bilateral negotiations with Japan. (This country) already has a free trade agreement with Australia and is close to concluding a free trade agreement with the European Union.”

Canada can't afford to repeat its trade experience with South Korea, says Davidson. In that situation, the U.S. and Korea Free Trade Agreement took effect in 2012. This resulted in “Canadian trade negotiations staggering from leading to trailing their counterparts (of) the E.U. and the U.S.,” says Davidson.

However, “Canada’s relatively new free trade agreement with (South) Korea continues to have a supporting effect on exports of hogs,” says Savaryn-Roy. This agreement is likely to help Canada recover some of the market share that it lost from South Korea because of the U.S. and Korea agreement.

Another notable event occurred in 2014, when Russia halted imports of food products from Canada, the European Union and the United States. Since then the E.U. has been aggressive in securing other markets such as Japan and Canada.

The Canadian pork industry is in fact now trying to develop the exports to the European Union, says Stordy. “The Canada-European Union Comprehensive Economic and Trade Agreement (CETA) has helped deal with tariffs. Now we are dealing with working out technical details.”



Gary Stordy

Another opportunity is Argentina, he says. “Justin Trudeau (Canada’s prime minister) was just down in Argentina (in) November 2016 and was able to secure a process for Canada to regain access to that market. Argentine consumers really enjoy red meat; we see pork substituting in well.”

**Quality of Canadian pork**

Canada is globally competitive. And it is the producers that ultimately help differentiate Canadian pork, says Stordy.

“We are responsible (for) how we raise the animals and provide

consistently healthy and safe products,” he says. “Consumers want to know that their animals were raised well, right around the world.”

Davidson shares similar views on the importance of quality.

“Canada is not a low-cost producer of either hogs or pork. Therefore, it is imperative that Canadian pork be marketed and valued globally as safe and of high quality,” he says. Both these qualities are shaped during every step in the production and supply chain.

“Producers use leading-edge genetics, high-quality nutrition and advanced management skills as well as the on-farm Canadian Quality Assurance (CQA) program to ensure the high quality of Canadian pork. Processors use leading-edge technologies that allow Canadian exporters to supply markets around the globe, including Japan and South Korea. (Exporters supply) not only frozen pork, but also reliably safe, high-quality fresh, chilled pork that has a comparatively long shelf-life.”

Producer involvement and branding are important too.

The new “Verified Canadian Pork (VCP) brand allows us to market our products based on food safety, animal care and traceability attributes to users and consumers of pork,” says Urias. One of the objectives of the VCP program is to “increase end-user customer and consumer confidence



**HyLife sells the most products to Japan, China, the United States, Mexico and domestically in Canada.**

and awareness in the quality and safety of Canadian pork.”

On-farm programs included in the branding program are PigCare, Pig Safe and PigTrace.

These on-farm programs give buyers a sense of security that the product is safe, says Vielfaure.

**Concluding thoughts**

Canada’s pork export program is in a good situation, says Stordy. “We are exporting well. We have markets that we are shipping to regularly.

“There is a whole chain involved (in exporting pork), including the work of the producers, transporters, rail services, processors and end users. There (must be) no hiccups in that flow,” he says.

“The Canadian pork industry is focused on avoiding disruptions, while the Canadian Food Inspection Agency focuses on creating strong food-safety programs.”

Davidson concludes with similar thoughts.

“Food and beverage processing is the largest component of the Canadian manufacturing sector and meat processing provides more jobs than any other component of the food-processing industry,” he says.

“Meat processing provides an indirect market for feed grain farmers, a direct market for livestock producers,

65,000 jobs in both rural and urban Canada, and critical tax revenues to local communities.

“The Canadian livestock and meat sector is a world-leader with ample opportunity and desire to provide even

more exports, jobs and economic growth. However, the realization of this potential requires a government tax and regulatory framework that allows competitiveness as well as access to labour.” **BP**

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Founding Partners



# Hutterite farmer raises pigs – and future producers

This Lakeside Colony hog manager spent his youth learning from those around him. Now he is paying it forward and planting the seeds for the farmers of tomorrow.

by GEOFF GEDDES



Mark Wipf

“We’re not just raising chickens and cows and pigs; we’re raising the next generation of producers.” That’s a philosophy that Mark Wipf and his fellow Hutterite colony members really take to heart. In a pretty little area near Cranford, Alberta, Lakeside Colony has been dutifully farming 16,000 acres since 1935.

With the combined efforts of 80 colonists and 20 working men, they deal with 20,000 layer hens, 700 beef

cattle and the chief source of pride for Mark: a 520 sow farrow-to-finish operation.

Every Monday, in collaboration with cousins Jerry and Phillip, he ships an average of 260 pigs weighing 260 lbs each to the Maple Leaf plant in Lethbridge 20 minutes away. If it sounds like he has a great grasp of the numbers on the colony, there’s a reason for that: he has been farming since he was 15.

“I started out as a teenager spend-

ing time with our experienced members learning the ropes. From there I jumped in and started running the combine, cultivator and truck. In the winter months I worked in the various barns under the direction of the farm boss, helping the beef guys one year and the chicken guys the next,” Mark says.

When he turned 23, the colony’s board of directors chose the hog operation as Mark’s permanent post and he’s glad they did.

**What's your role on the farm?**

I've served as the hog manager for the last 18 years, overseeing the daily operation and handling risk management. I also manage the feed mill to ensure that all of our livestock get the feed they've been allotted.

**Hours you spend in the barn per week?**

We start at 8 a.m. sharp and work hard until 11 a.m.

At that point the whole colony breaks for lunch as we prepare for a busy afternoon from 1 p.m. to 5 p.m. So it's a full seven or eight hour day.

**Hours you spend in the office per week?**

I average an hour a day, which works out to seven hours per week as we don't take Sunday off. It's just a feeding day but there's still plenty of work to do.

**How many emails do you receive per day?**

20.

**How many text messages do you receive per day?**

10 to 15 on average. I used to have faxes to deal with but with all the technology now the fax machine has been pretty quiet.

**Hours a day on a cell phone?**

One. I'm too busy to do any more than that.

**What type of smartphone do you have?**

An iPhone 6. I don't need all the bells and whistles – just texting, phoning, emailing and, of course, the apps.

**Email or text?**

I'm not fussy. I'll use whichever is faster for my purposes.

**Hours a day on the Internet?**

One.

**How often do you travel?**

Most of my travel is work-related. I attend the Banff Pork Seminar, (Alberta) Pork Congress and Alberta Pork producer meetings.

Every four years I take in the World Pork Expo (the world's largest pork-specific trade show) in the United States.

**Where did you last travel to?**

I don't get off the continent very often, but I did attend a livestock exhibition in Hanover, Germany that stands out for me.

**What do you like best about farming?**

I enjoy raising pigs and being involved in other areas of farming as well.

It means a lot to know I am helping not just to feed the world but

to provide the best quality of food possible.

**What do you like least?**

There's not much I don't like, so that's a tough question.

**What is the single most important advice you've received or lesson you've learned?**

Learn everything you can about the farm because you never know when you might be managing part of it!



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NEVER STOP IMPROVING

**What's your management philosophy or guiding management principle?**

Always operate above the line.

That means being transparent, hands-on and encouraging everyone to do their best.

**What's your advice for working so closely with multiple generations?**

There are always challenges, but you can benefit from their (the older generation's) knowledge and experience. That was how it went when I worked with my dad and other family. I'd be right next to them watching until I felt comfortable and then I was expected to fly on my own.

**Is there a practical difference between being a Hutterite pork producer and a non-Hutterite producer?**

Because we have a colony manager who pays all the bills, I just hand them to him once a week and I don't have to worry about that part of the business the way other producers would. It frees up some time, but it also means I know less about the bottom line than someone who has to deal with the paperwork.

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

I've been a director on the board of Alberta Pork for 10 years now. It's the association that represents pork producers in the province, so I think it's important to provide my input and help other producers understand what's going on.

**What are your hobbies or recreational activities?**

What are those? I don't have much time for those things but I like to fish at a nearby lake when I get a chance. Otherwise, my main activity outside of work is playing baseball or something else with my four kids at home.

**Is your farm vehicle messy or neat?**

Definitely neat.

**What are three items that are always to be found in your pickup?**

Keys, sunglasses and a pen.



Mark Wipf

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

Calculator, paper and stapler. They never go out of style.

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

A pipe bender for \$15,000.

**What's the best time of day?**

Morning. Your tank is full and you're ready to take on the day.

**What was your most memorable production year?**

2014 for all the wrong reasons. PED wiped out a few million pigs in the United States and some in Canada and drove pork prices through the roof.

It was devastating for many producers but probably saved others from going bankrupt.

**How do you define success?**

Doing it right the first time and doing your best.

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

Prices in Alberta and Canada rarely keep up with prices south of the border and constantly fluctuate.

Last week, we had three meetings around the province with producers looking at how to do this and get a "made in Canada" price.

Maybe we can do it like the potato or beet growers and negotiate a contract over a few years to lock in the price.

We also need packers to share a bit with us when times are rough and realize that they need us to survive – we're all in this together.

**What's your most important goal? In life? In work?**

To make sure at the end of the day I did something that made a difference and helped the colony prosper. We need to help each other and set the table for the next generation of farmers. **BP**

*This interview has been condensed.*



## Enrichment for Pigs

In 2014 the National Farm Animal Care Council of Canada released an updated Code of Practice for the Care and Handling of Pigs. Included in this are requirements and recommendations for enrichment. The information presented here is a summary of 'Section 1.8 Enrichment' from the Code of Practice:

### Requirements and Recommended Practices

#### Requirements:

"Pigs must be provided with multiple forms of enrichment that aim to improve the welfare of the animals through the enhancement of their physical and social environments."

#### Recommended Practices:

1. "Provide continual access to a range of novel suspended toys such as cloth strips or rubber, or straw dispensers, along with free toys on the pen floor in housing where the use of substrates may impede manure management systems."
2. "Provide some type of physical enrichment such as straw, hay, wood, sawdust, mushroom compost, peat or a mixture of such that does not adversely affect the health of the animals when it can be safely used."

### Goals of Enrichment

According to the Code of Practice, enrichment enhances the animals' physical and/or social environments thus improving animal welfare. The stated goals of enrichment include:

- Increasing the number and range of normal behaviours,
- Preventing the development of abnormal behaviours, or reducing the frequency or severity,
- Increasing positive utilization of the

environment, and

- Increasing the animal's ability to cope with behavioural and physiological challenges.

### Types of Enrichment

The barn environment can be enhanced through several types of enrichment:

- Social – Direct or indirect contact with other pigs,
- Occupational – Psychological enrichment that provides animals with control or challenges, and enrichment that encourages exercise,
- Physical – Altering the animals' enclosures or adding accessories such as objects and substrates,
- Sensory – Visual, auditory, olfactory, tactile and taste stimuli, and
- Nutritional – Presenting varied or novel food types, or changing the method of food delivery.

### Points to Remember

Pigs can quickly lose interest in an enrichment item and thus the best types of enrichment are complex, changeable, malleable, destructible and are safe if potentially ingestible.

Enrichment materials need to be inspected on a regular basis to ensure they do not cause health problems or compromise food safety.

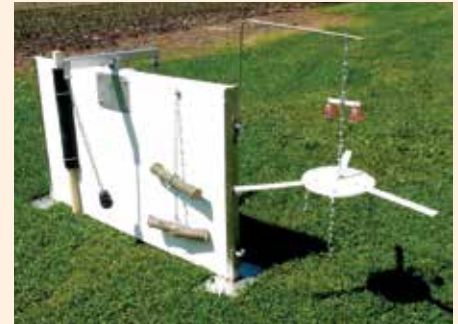
Providing enrichment objects that are suitable for chewing and/or rooting can help deter pigs from ear and tail-biting, belly nosing and sham chewing.

Enrichment does not need to be expensive and items can often be made from materials already on farm (chains, cloth strips, hoses, wood, straw, etc.).

The Code of Practice for the Care and

Handling of Pigs (2014) can be downloaded from: [http://www.nfacc.ca/pdfs/codes/pig\\_code\\_of\\_practice.pdf](http://www.nfacc.ca/pdfs/codes/pig_code_of_practice.pdf)

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## Hydrogen Sulphide in Swine Barns

Hydrogen Sulphide (H<sub>2</sub>S) awareness for liquid manure handling systems is needed to ensure worker and swine safety. Hydrogen Sulphide is created from decomposing biological material in the absence of oxygen. Sulfur enters the liquid manure system through feces and urine. H<sub>2</sub>S remains bound to manure molecules resulting in accumulation over time. The concentration of accumulated H<sub>2</sub>S can increase rapidly during agitation.

There are several H<sub>2</sub>S hazardous locations in swine operations, including:

1. Shallow barn gutters,
2. In-barn deep manure pits,
3. Underground or outside storage tanks, lift or pump stations, and
4. Earthen manure storage facilities.

H<sub>2</sub>S is the most dangerous gas produced from decomposing manure. A worker should not go into a pit that is below floor level without proper equipment and training. There are several symptoms of H<sub>2</sub>S exposure

for swine and people. Some of these symptoms are listed below and vary with severity and length of exposure. At low concentrations H<sub>2</sub>S has a characteristic rotten egg smell, but at higher concentrations it paralyzes the sense of smell and causes death in livestock and people.

Impact of H<sub>2</sub>S on Swine:

- Distress,
- Eye Irritation, and
- Cyanosis.

Impact of H<sub>2</sub>S on People:

- Fatigue,
- Headaches, and
- Dizziness.

If you or a worker experiences any of these symptoms after exposure to H<sub>2</sub>S, exit the area and seek medical attention.

## Exposure Limits for Hydrogen Sulphide

Ontario's occupational health and safety regulations have exposure level limits for H<sub>2</sub>S. The time weighted average for 8 hour exposure, 40 hours per week must not exceed 10 ppm. Short-term exposure limit for 15 minute exposure must not exceed 15 ppm. Immediate danger for life and health must not exceed 100 ppm.

Personal H<sub>2</sub>S monitors are highly recommended for use when washing and pulling pits. These monitors act as a warning device. If the alarm sounds proceed to a safe area immediately.

## Management

Appropriate manure pit management can assist in reducing the risk of H<sub>2</sub>S in your swine operation. Standard operating procedures and emergency plans for manure handling need to be created for the facility to ensure everyone's safety.

Safety tips for pulling pits include:

- Familiarize workers with the standard operating procedures,
- Wear an H<sub>2</sub>S monitor,
- Use good communication,

- Maintain adequate ventilation,
- Pull pits every three weeks to reduce accumulation of H<sub>2</sub>S, and
- Never bend over into the pit.

Some examples of safety precautions to be included in a standard operating procedure for your farm can be found by visiting "Pit Foaming and Manure Gases" on the OMAFRA Livestock website: <http://www.omafra.gov.on.ca/english/livestock/swine/news/novdec10a1.htm>

References:

LaRoche., S. Hydrogen sulphide awareness for liquid manure handling systems. Prairie Swine Centre. 2009.

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## Best Practice Sheets for the Barn

On a farm it's often the case that most people will have their main areas of responsibility, but there are times when certain tasks are carried out by people that don't do that task routinely. It may also be that people are rotated through different jobs for training, or to make sure everyone knows how to do multiple jobs in case of an absence, and so on.

In any case it can be challenging to make sure everyone involved is trained to do the job correctly and that it is done consistently from one time to the next. It's also true that even though someone has been taught how to do

a task, with the passage of time some key things can come to be forgotten or some steps might be overlooked.

For example, how should a piece of equipment be cleaned and stored after use? How should a pen look after being cleaned and prepared for its next occupants? How should feeders look when they are adjusted properly?

One way to help keep everyone aware of what is expected is the use of what I'll call Best Practices Sheets. This is a sheet of paper that has been laminated and posted close to the relevant area of the barn. On this sheet of paper are two photos; one is a picture of how things look when everything has been done right and the second is a picture of how things might look when something has been missed or done incorrectly. One could have a big checkmark in the corner and the other a big X. To the side of the photos should be a few very short bullet points about what should, or shouldn't, be done and a brief description of the consequences of not doing things right.

On the back side of the page you could expand on the best practices that are expected, provide more detail on how they should be carried out, and maybe some more information on the costs and repercussions of not doing things properly.

A Best Practices Sheet posted near every important area of the facility would provide a reminder of what is expected when tasks or procedures are done right.

Review the sheets with anyone who may need to do a particular task or procedure. This will help ensure that when it comes to how things should be done on your farm, everyone is on the same page.

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## Preventing Fires on Farm

### Did you know?

Faulty electrical systems cause approximately 40 per cent of barn fires with a determined cause, making it one of the leading known causes of barn fires.

### What can you do?

Regular inspections and maintenance are key to reducing the risk of a barn fire. We recommend that you work with a professional to inspect and monitor your farm buildings.

- Have your buildings inspected and maintained regularly by a licensed electrical contractor.
- Develop a preventative maintenance and housekeeping schedule.
- Work with a professional to monitor the heat conditions of your barn using infrared technologies.
- Work with your local fire department and insurance company to identify problem areas on your farm, and fix any problem areas identified.
- Have a plan ready to deal with any emergency.
- Train your family and employees on what to do if there is a barn fire. Learn how to handle and what to do with livestock, make a list of who to call during and after a fire, and establish a safe meet-

ing point.

Visit [ontario.ca/preventfarmfires](http://ontario.ca/preventfarmfires) to find helpful resources, including:

- The Reducing the Risk of Fire on Your Farm book that examines the main causes of farm building fires and what you can do to minimize risks.
- A checklist to help you assess your farm's barn fire risk.
- A link to the Farm Fire and Emergency Sketch web page that explains step-by-step how to create a sketch for your operation.
- Our Electrical Systems in Barns Factsheet that provides information on how an electrical system can start a fire, regulations and barn electrical maintenance practices.
- Links to different inspection, monitoring and extinguishing technologies, such as FLIR heat-sensing cameras, Cole-Parmer gas detectors and the DSPA 5 aerosol generator.
- A link to Livestock Welfare's Emergency Response web page, offering great resources on what to do with and how to handle livestock during an emergency.
- A link to Equine Guelph's training program on livestock behaviour in emergencies and barn fire prevention tools.

Barn fires can create unique challenges for farmers, including the disposal of large

volumes of deadstock. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has a regulation that gives you options for deadstock management. These options help to protect water quality, reduce environmental impacts and minimize biosecurity hazards, such as scavenging.

Collection of deadstock by a licensed collector is recognized as the most effective and sustainable disposal method. In emergency situations, you can apply to OMAFRA for an Emergency Authorization for the storage, disposal or transportation of deadstock. These authorizations can be used when emergency conditions exist that make it difficult for you to dispose of deadstock according to the regulation.

For more information and to suggest a different fire prevention device, technology or program that could be listed on our website, contact the Agricultural Information Contact Centre (AICC) at 1-877-424-1300 or [ag.info.omafra@ontario.ca](mailto:ag.info.omafra@ontario.ca).

Visit [ontario.ca/farmsafety](http://ontario.ca/farmsafety) for other resources and tips for keeping a farm safe. At [ontario.ca/deadstock](http://ontario.ca/deadstock), you can find information on contingency deadstock planning and the regulation.

[ontario.ca/preventfarmfires](http://ontario.ca/preventfarmfires)

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Conference Schedule:

**12:00pm to 2:00pm** - Open House:  
Visit the new on campus Swine Barn

**2:00pm** - Registration, Rudy Brown Rural Development Centre

**2:00pm** - Meet & Greet Sponsors, Trade Show & Refreshments - Join Colleagues and Sponsors for light refreshments in the trade show area. RDC Pestell Auditorium

**4:00pm** – Conference Welcome, Agronomy Lecture Theatre 137

**4:15pm** – Producer Profile (Alec Boekhoven, Appin, Ontario)

**5:00pm** – Creep Feeding (Dr. Laura Eastwood, OMAFRA)

**5:45pm** – Reproductive Problems (Dr. Billy Flowers, North Carolina)

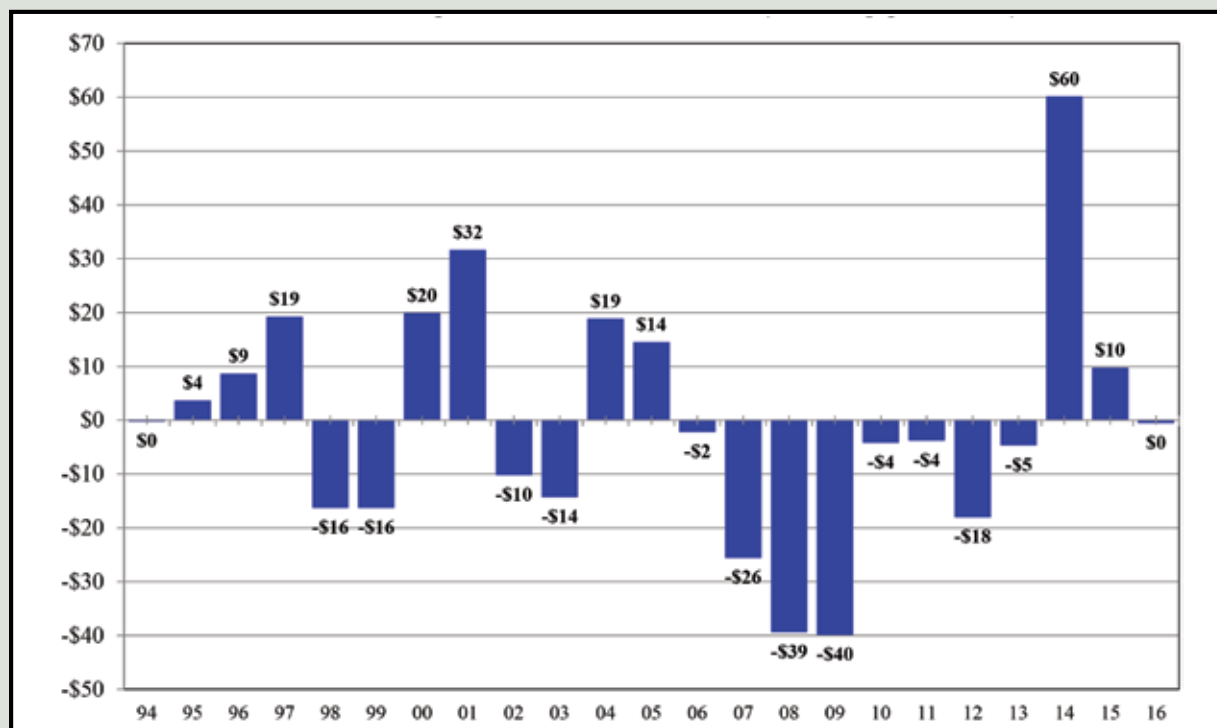
**6:30pm** – Dinner, Willson Dining Room

**7:15pm** – Local Update, Agronomy Lecture Theatre 137 (Dr. Bill Moore, South West Ontario Veterinary Services)

**7:40pm** – Feature Speaker "Management Factors Associated with Sow Longevity" – Dr. Billy Flowers, Professor of Animal Science & Physiology, North Carolina State University

**9:00pm** – Wrap up

## OMAFRA Swine Budget Farrow to Finish Net Return (\$/market pig, 1994-2016)



Data Source: Monthly OMAFRA Swine Budgets

### OMAFRA Farrow to Finish Swine Enterprise Budget - 6 Year Summary

	2011	2012	2013	2014	2015	2016
<b>Market Hog Value</b>	\$172.82	\$168.39	\$183.85	\$237.53	\$185.77	\$177.69
<b>Feed Costs</b>	\$118.38	\$127.77	\$128.21	\$117.75	\$115.72	\$113.95
<b>Other Variable Costs</b>	\$37.31	\$37.71	\$39.49	\$37.80	\$38.44	\$40.43
<b>Fixed Costs</b>	\$20.85	\$20.85	\$20.74	\$21.92	\$21.92	\$23.76
<b>Total Cost per Pig</b>	\$176.53	\$186.33	\$188.45	\$177.46	\$176.07	\$178.14
<b>Net Return</b>	-\$3.71	-\$17.94	-\$4.60	\$60.07	\$9.70	-\$0.45

#### Calculated Return Over Feed Costs (Market Hog Value less Feed Costs)

\$ per pig	2011	2012	2013	2014	2015	2016
	\$54.44	\$40.62	\$55.64	\$119.79	\$70.05	\$63.74

#### Calculated Breakeven Prices

	2011	2012	2013	2014	2015	2016
<b>Variable Costs</b>	\$145.12	\$151.93	\$152.31	\$136.82	\$134.21	\$134.50
<b>Total Costs</b>	\$164.79	\$171.31	\$171.38	\$156.35	\$153.54	\$155.47

#### Market Information

<b>Dressed Weight</b>	96.28	96.85	97.92	101.01	102.04	101.98
<b>Market Index</b>	110.00	110.00	110.00	110.00	110.00	110.00
<b>Market Price (100% FP)</b>	\$161.29	\$154.64	\$167.16	\$209.88	\$163.00	\$163.00
<b>Corn (FOB Huron, \$/tonne)</b>	\$259.98	\$259.01	\$222.10	\$173.80	\$183.66	\$181.87
<b>Corn (W. Ont. Feed, \$/tonne)</b>	\$276.39	\$276.25	\$237.94	\$192.90	\$198.19	\$197.47
<b>Soybean Meal</b>	\$411.42	\$523.97	\$564.72	\$641.85	\$528.25	\$520.26
<b>U.S. Reference Price</b>	\$90.18	\$85.43	\$89.65	\$105.28	\$70.36	\$64.97
<b>Canadian Dollar Value</b>	\$1.0110	\$1.0004	\$0.9711	\$0.9061	\$0.7837	\$0.7548
<b>Prime Interest Rate</b>	3.00%	3.00%	3.00%	3.00%	2.71%	2.70%

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Income (\$/pig)	Farrow to Wean	Nursery	Grow-Finish	Farrow to Finish
Market Pig @ 101% of Base Price \$132.28/ckg, 110 index, 102.35 kg plus \$2 premium				\$150.87

Variable Costs (\$/pig)				
Breeding Herd Feed @ 1,100 kg/sow	\$13.74			\$15.07
Nursery Feed @ 33.5 kg/pig		\$15.60		\$16.43
Grower-Finisher Feed @ 278 kg/pig			\$79.84	\$79.84
Net Replacement Cost for Gilts	\$2.29			\$2.51
Health (Vet & Supplies)	\$2.16	\$2.10	\$0.45	\$5.03
Breeding (A.I. & Supplies)	\$1.48			\$1.63
Marketing, Grading, Trucking	\$0.70	\$1.00	\$4.66	\$6.48
Utilities (Hydro, Gas)	\$1.96	\$1.15	\$1.77	\$5.14
Miscellaneous	\$1.00	\$0.10	\$0.20	\$1.40
Repairs & Maintenance	\$1.18	\$0.60	\$2.13	\$4.05
Labour	\$6.27	\$1.85	\$4.00	\$12.83
Operating Loan Interest	\$0.24	\$0.29	\$0.92	\$1.48
<b>Total Variable Costs</b>	<b>\$31.02</b>	<b>\$22.68</b>	<b>\$93.97</b>	<b>\$151.89</b>

Fixed Costs (\$/pig)				
Depreciation	\$3.92	\$2.00	\$7.09	\$13.50
Interest	\$2.20	\$1.12	\$3.97	\$7.56
Taxes & Insurance	\$0.78	\$0.40	\$1.42	\$2.70
<b>Total Fixed Costs</b>	<b>\$6.90</b>	<b>\$3.52</b>	<b>\$12.48</b>	<b>\$23.76</b>

Summary of Costs (\$/pig)				
Feed	\$13.74	\$15.60	\$79.84	\$111.35
Other Variable	\$17.27	\$7.09	\$14.13	\$40.54
Fixed	\$6.90	\$3.52	\$12.48	\$23.76
<b>Total Variable &amp; Fixed Costs</b>	<b>\$37.92</b>	<b>\$26.20</b>	<b>\$106.46</b>	<b>\$175.66</b>

Summary	Farrow to Wean	Feeder Pig	Wean to Finish	Farrow to Finish
Total Cost (\$/pig)	\$37.92	\$65.67	\$134.07	\$175.66
Net Return Farrow to Finish (\$/pig)				-\$24.79
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) includes 101% Base Price & \$2 Premium				\$154.30
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) excludes 101% Base Price & \$2 Premium				\$157.64

This is the estimated accumulated cost for a market hog sold during the month of December 2016. The farrow to wean phase estimates the weaned pig cost for July 2016 and the nursery phase estimates the feeder pig cost for September 2016. For further details, refer to the "2016 Budget Notes" posted at <http://www.omafra.gov.on.ca/english/livestock/swine/finmark.html>.

# A new pestivirus identified as cause of congenital tremors

Recent research may provide further insight into congenital tremors, commonly known as shaking pig disease. But other viruses have been blamed for causing this disease before.

by S. ERNEST SANFORD



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**Congenital tremors (CT), also known as myoclonia congenita, “shaker pigs” and “dancing pigs,” is a disease seen in newborn pigs in all major pig-producing countries.**

Congenital tremors (CT), also known as myoclonia congenita, “shaker pigs” and “dancing pigs,” is a disease seen in newborn pigs in all major pig-producing countries. CT is characterized by involuntary tremors (shaking) of the head and limbs in newborn pigs, varying in severity. The tremors typically reduce as the piglets get older and are usually absent when the piglets are sleeping. If the tremors prevent the piglets from securing a teat and suckling, then mortality may be high from starvation and/or crushing by the sow.

### A novel pestivirus

At the 24th International Pig Veterinary Society Congress held in Dublin, Ireland, between June 7 and 10, 2016, two different groups of researchers presented their findings identifying a new pestivirus as the cause of congenital tremors.

The two research groups, one at Iowa State University in Ames, Iowa and the other at Merck Sharp & Dohme Animal Health in Boxmeer, the Netherlands, made their discoveries independently and almost simultaneously. Interestingly, both research groups used next generation sequencing (NGS) to identify the novel pestivirus, which was subsequently identified as a new porcine pestivirus. The groups both then infected normal fetuses, in utero, with serum from CT-infected pigs. The in utero infected pigs all exhibited classical signs of CT at birth. Sham-inoculated fetuses did not develop the disease.

NGS is a short read, massively parallel sequencing technique which has increased the ability 1,000-fold of researchers sequencing genetic material. The technique has also reduced the cost of sequencing from

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**If the tremors prevent the piglets from securing a teat and suckling, then mortality may be high from starvation and/or crushing by the sow.**

millions or billions of dollars down to about USD\$1,000 for the same amount of sequencing power via NGS.

### Pestiviruses

Viruses in the genus pestivirus are ribonucleic acid (RNA) viruses that infect mammals, especially cattle, sheep, goats and swine. The type species of pestivirus is Bovine viral diarrhoea virus (BVDV).

### A word of caution

A cautionary note is necessary because several other viruses have been claimed as the cause of CT in past decades. Classical swine fever virus (hog cholera virus) is the one most frequently blamed. CT, however, occurs in areas and countries that do not have hog cholera.

An astrovirus has also been implicated as the cause of CT but could not be substantiated and so fell out of favour. We need to extend some caution before total acceptance of this new pestivirus as the true cause of CT.

### Conclusions

So does this mean that we have finally found the true cause of congenital tremors? Not just yet. Time will tell if this new pestivirus continues to live up to these initial claims as the cause of CT.

There is little doubt that a virus

is the cause of CT but there have been other viruses in the past that have been presented as the cause of CT, all of which have proven, over time, not to be. We will just have to wait to see if this porcine pestivirus stands the test of time and does

prove to be the true cause of congenital tremors. **BP**

*S. Ernest Sanford, DVM, Dip Path, Diplomate ACVP, is a Swine Veterinary Consultant based in London, Ont.*

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# Balancing the benefits of pellet feeding with the health of grower-finisher pigs

Pelleted diets can help to minimize feed waste and improve feed efficiency. But, these feeds can also cause stomach ulcers and deaths. Researchers demonstrate benefits of rotational feeding patterns.

by JANICE MURPHY

**M**any swine producers have made the switch to pelleted rations in an effort to optimize grower-finisher production, with the goal of improving feed efficiency and minimizing waste of valuable nutrients.

However, research at the University of Guelph dating as far back as 2004 identified risks to pig health when feeding pelleted diets. These diets can cause an increase in the incidence of ulcers in finishing pigs and ultimately lead to increases in mortality.

At the moment, there is not enough data to clearly determine the best option to maximize pig performance for producers who choose to feed a limited amount of pelleted feed during the finishing period. Although the effects of feeding pelleted feed for varying lengths of time or pulse feeding (switching between pelleted and meal diets) have been evaluated, the effects of pelleted feed on stomach morphology has not been clearly established.

Researchers at Kansas State University in the United States recently set out to assess rotational feeding of pellet and meal diets. This study was an attempt to see if pork producers could realize the benefits of pelleting without increasing the incidence of gastric ulcers and the corresponding pig removals commonly associated with a regimen of continuous pellet feeding.

A total of 2,100 pigs were used in a 118-day trial, starting at 32 kg body weight, to determine the effects of pellet or meal feeding strategies on finishing pig growth performance, stomach morphology and carcass characteristics. Corn-soybean meal diets containing 15 per cent dried



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**Many swine producers have made the switch to pelleted rations in an effort to optimize grower-finisher production, with the goal of improving feed efficiency and minimizing waste of valuable nutrients.**





**Pigs fed meal diets throughout the study had significantly greater average daily feed intake compared to pigs fed pelleted diets throughout.**

distillers' grains with solubles were used for all treatments and fed in five phases (day 0 to 28, 28 to 56, 56 to 84, 84 to 98, and 98 to 118). The six treatments included:

1. meal diet fed from day 0 to 118,
2. pelleted diet fed from day 0 to 118,
3. meal diet fed from day 0 to 70, followed by pellets from day 70 to 118,
4. pelleted diet fed from day 0 to 70, followed by a meal diet from day 70 to 118,
5. pellets and meal rotated every two weeks starting with meal,
6. pellets and meal rotated every two weeks starting with pellets.

Just prior to the end of the study, on day 110, two barrows and two gilts from each pen were harvested and their stomachs were collected. From these samples a combined ulcer and keratinization score was determined for each pig.

Overall, there were no differences in average daily gain across feeding regimens. (See the table on page 35.) The vast majority of research comparing meal and pelleted diets in finishing pigs has shown at least numerical improvements in weight gain when pigs are fed pelleted diets. The lack of a difference in this particular study may be due to the impact that pelleting had on stomach morphology as indicated by the ulcer index scores.

Pigs fed meal diets throughout the study had significantly greater average daily feed intake compared to pigs fed pelleted diets throughout, with all other treatments falling somewhere in between. The lower feed intake of pigs fed the pelleted

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**Feeding a coarsely-ground meal diet for as little as a three-week period improved stomach morphology after feeding a finely-ground diet.**

diet may be a direct result of feed wastage being minimized or the improvement in digestibility of these diets.

Not unexpectedly, pigs fed the pelleted diets throughout significantly out-performed all the other pigs in terms of feed efficiency.

There were no significant differences in carcass characteristics, regardless of treatment.

Pig removals from the study were determined by an on-site manager when the pigs were deemed to be at risk due to weight loss, health or animal welfare issues that necessitated that pigs be separated from the rest of the population.

Feeding pellets for the full 118 days of the trial significantly increased the number of pigs removed per pen compared with all other treatments. When pelleted diets were fed for the entire trial, or for only the last 48 days, the ulcer index significantly increased relative to pigs fed meal diets for the last 48 days. All other treatments fell somewhere in between. Based on these results, it is evident that continuously feeding a pelleted diet increased the ulceration index, leading to an increased number of pigs requiring removal from the study.

Previous research at the University of Guelph was able to demonstrate that feeding a coarsely-ground meal diet for as little as a three-week period improved stomach morphology after feeding a finely-ground diet. In the current study, although both the meal and pelleted diets

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**Rotating between a meal diet and a pelleted diet during the finishing period can decrease the incidence of stomach ulcers, while still realizing some of the feed efficiency benefits of pelleting.**

## The effect of pellet feeding on finishing pig growth performance, carcass characteristics and stomach morphology

Period	Diet form fed during period					
	Meal	Pellet	Meal	Pellet	Rotated <sup>1</sup>	Rotated <sup>2</sup>
Day 0 to 70						
Day 70 to 118	Meal	Pellet	Pellet	Meal	Rotated	Rotated
BW, kg						
Day 0	31.5	31.6	31.4	31.4	31.6	31.5
Final weight	135.6	136.6	136.0	134.0	135.3	136.2
Day 0 to 118						
Average daily gain, kg	0.96	0.97	0.96	0.96	0.96	0.97
Average daily feed intake, kg	2.36 <sup>a</sup>	2.26 <sup>b</sup>	2.30 <sup>bc</sup>	2.28 <sup>bc</sup>	2.30 <sup>b</sup>	2.29 <sup>bc</sup>
Gain: Feed	0.407 <sup>c</sup>	0.430 <sup>a</sup>	0.421 <sup>b</sup>	0.422 <sup>b</sup>	0.420 <sup>b</sup>	0.423 <sup>b</sup>
Pigs removed/pen	0.50 <sup>b</sup>	1.92 <sup>a</sup>	1.06 <sup>b</sup>	0.93 <sup>b</sup>	0.85 <sup>b</sup>	0.92 <sup>b</sup>
Keratinization score	2.3	2.4	2.2	2.1	2.8	2.1
Ulceration score	1.5	2.0	2.2	1.6	1.8	1.6
Ulcer index <sup>3</sup>	5.25 <sup>ab</sup>	6.72 <sup>a</sup>	6.72 <sup>a</sup>	4.61 <sup>b</sup>	6.15 <sup>ab</sup>	5.32 <sup>ab</sup>
Carcass characteristics						
Hot carcass weight, kg	97.9	99.2	98.6	97.9	98.4	98.9
Yield, %	74.8	75.2	74.7	74.8	75.3	75.6
Backfat, mm	16.7	17.1	16.8	16.5	16.8	16.8
Loin depth, mm	72.8	73.8	73.9	73.4	73.7	73.9
Lean, %	56.3	56.2	56.2	56.5	56.5	56.3

a–c Superscripts within a row are different ( $P < 0.05$ ).

<sup>1</sup> Meal and pellet were rotated every two weeks starting with meal and ending with pellet. Pigs were fed a meal diet for 10 days prior to collecting stomach morphology scores.

<sup>2</sup> Meal and pellet were rotated every two weeks starting with pellet and ending with meal. Pigs were fed a pelleted diet for 10 days prior to collecting stomach morphology scores.

<sup>3</sup> An index of stomach morphology was developed by adding a pig's ulcer and keratinization score. An additional score of four was added to each pig that had an ulceration score greater than one.

Sources: J.A. De Jong, J.M. DeRouchey, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.C. Woodworth, and M.W. Allerson. 2016. "Evaluating pellet and meal feeding regimens on finishing pig performance, stomach morphology, and carcass characteristics." *J Anim Sci* 94(11):4781–4788; and J.A. De Jong, J.M. DeRouchey, M.D. Tokach, S.S. Dritz, R.D. Goodband, and M.W. Allerson. 2015. "Evaluating pellet and meal feeding regimens on finishing pig performance, stomach morphology, carcass characteristics, and economics." *Kansas Agricultural Experiment Station Research Reports* 1(7): Article 18.

were from the same corn source and had identical particle sizes, it is possible that the pelleting process may have negatively impacted the particle size of the diet. Achieving a finer grind would explain why stomach morphology scores worsened when pigs were fed pellets.

The researchers suggested that an increase in fluidity of the stomach contents could have led to increased incidences of ulceration. References in the literature show that the pH of the stomach is more consistent in all four regions when pigs are fed a pelleted diet compared with a coarse meal diet. These findings could indicate that the level of fluidity creates an environment where there is in-

creased mixing of stomach contents when a pelleted diet is fed.

The researchers also performed an economic analysis of the research outcomes (data not shown). For the purposes of this analysis, pig removals during the trial were considered mortalities. The economic picture showed that feeding a meal diet throughout the experiment significantly increased feed cost (\$/lb gain) compared to all other treatments.

There were no significant differences in income over feed cost (IOFC; calculated as total revenue/pig minus feed cost/pig). However, there were numerical differences suggesting that rotating between pellets and meal diets improved IOFC

by \$1 to \$2 above feeding a meal diet throughout the finishing period.

In conclusion, these results suggest that rotating between a meal diet and a pelleted diet during the finishing period can have an impact on pig health. This feeding approach can decrease the incidence of stomach ulcers, while still realizing some of the feed efficiency benefits of pelleting. Alternating between pellets and a meal diet also appeared to maximize economic returns. **BP**

*Janice Murphy lives in P.E.I. She is a graduate of the University of Guelph with a MSc in swine nutrition and has worked in both the private and public sectors.*

# To eliminate or not to eliminate

Consider the different approaches these North American swine companies followed. Regardless of the choice you make, PED will cost you.

by LILIAN SCHAER for SWINE HEALTH ONTARIO

When Porcine Epidemic Diarrhea (PED) strikes, the big question is whether to focus on elimination. It's costly, time-consuming work to rid a barn of the virus – but so is opting to “just live with it,” as speakers on either side of this decision told participants at Big Bug Day 2016, an OPIC Swine Health Board event.

When Smithfield Foods' Midwest region sow system of 16 farms – 53,000 commercial and 10,000 multiplication sows – broke with PED in February 2014, the company decided to bring in acclimated gilts.

They had additional breaks in December 2014 and December 2015, and are now in an endemic PED situation, said Dr. Whitney Lincoln, a company veterinarian.

“After each break, it gets harder to clean up each time,” she said. “It is now a chronic situation; we've had it for eight to 10 months.”

Lincoln attributes the company's endemic PED situation to various factors, including waning herd immunity – the herd can only go about five to six months before re-breaking with the disease. Others factors include larger farm sizes that offer more risk points, on-site gilt exposure, high employee turnover that hampers biosecurity procedures and farrowing barns that see negative pigs passing by, or through, potentially positive rooms.

“We're just setting ourselves up for failure by not getting rid of it,” she said, adding PED impacts last long beyond each actual break.

The company has seen a 12 per cent increase in pre-wean mortality due to chronic PED in that system, and a USD\$5 to \$10 loss per market hog due to higher feed conversion, lower average daily gain, increased mortality and higher sensitivity to other pathogens.

Long-term sow performance is also affected, including decreased udder



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**Swine Health Ontario has set a goal of eliminating PED from Ontario swine farms by October 2017.**

development, longer return to estrus and higher stillborn rates.

Lincoln said Smithfield's focus has since switched to eliminating PED and its farms in the system are now provisionally negative.

The response was a different one when a 2,500 head farrow-to-wean Sunterra farm in Ontario broke with PED in May 2016.

“Our culture is not to live with bugs and virus,” explained Mark Chambers, senior production manager. “We wanted to contain this (break) and not give it to anyone else and decided elimination is what's going to

happen.”

The company's plan included exposing all the sows, loading up on gilts, and creating a two week farrowing gap, followed by extensive clean up and tightened biosecurity.

Sunterra's biosecurity changes included entrance barriers, lime, lunch pass-throughs, new entrance and protocol for supplies, relocation of deadstock removal, elimination of shuttle buses and construction of a driver transfer platform. The company found PED had arrived on-farm via truck and an unwashed loading ramp.

The direct cost of the break to Sun-

terra was just under \$250,000, which included the loss of 4,500 pigs.

“When we look at what we’ve learned, the biggest is ensuring that staff is involved in setting protocols,” Chambers stated. “If staff doesn’t buy-in, the protocols won’t be any good.”

Other lessons learned include never taking existing protocols for granted and making a point of reviewing and auditing these protocols often.

“As we found out the hard way, just because it has worked for the last 10 years doesn’t mean it’s good enough today,” he added.

Sunterra’s U.S. operations had their first PED break in May 2013 and, after battling the disease over several years, are now hopeful that they’re finally on the road to PED-free status.

They’ve estimated their total cost of an early nursery break of PED at USD\$7.34 per pig, which includes \$4.75 in performance losses, \$1.79 in clean-up costs and \$0.80 in extra medication costs. And that’s why they’re not prepared to accept PED



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**Sunterra estimated its total cost of an early nursery break of PED at USD\$7.34 per pig.**

in their system, according to Ben Keeble, US general manager for Sunterra Farms.

“We find it hard to have PED in our system. It’s not just the money but also the untold costs on relationships with partners in the industry, staff morale and disruption on flow in the system,” Keeble said.

Swine Health Ontario has set a goal of eliminating PED from Ontario swine farms by October 2017. **BP**

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# Hakuna matata: a good philosophy for life

As farmers and pork producers, we face a number of challenges and stressors. But, we also have a number of blessings and opportunities. Enjoy the moment.

by RICHARD SMELSKI



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**Enjoy the moment, for few can appreciate the beauties that farmers take for granted.**

**H**akuna matata (a Swahili phrase, roughly translated as “don’t worry, be happy”) was made famous through the animated movie *The Lion King*. What do you believe – that happiness comes from within you or it is imposed upon you? Is happiness an inward or external response?

“Bill” is a pork producer, a friend and a mentor of mine. In my usual pursuit of the definition of success, I asked him, “How can you always be so composed, relaxed and deliberate in everything you do?”

Very quickly he replied, “Twenty years ago I was in a car accident. I was broadsided – I was in the driver’s seat – five ribs broken, bleeding spleen and I couldn’t breathe. I knew I was going to die and for those few moments, I sat there thinking, ‘If only I can live, I would always enjoy what I am doing.’ And then I took a breath.”

Bill manages a very successful farrow-to-finish operation, a 1,100-acre cash crop operation, and he volunteers a lot. He’s very successful, very generous and – most of all – fun to be with. He has no desire to be the biggest, the best or the wealthiest, although I think he ranks among the top in each category. He enjoys life and the pork business gives him the opportu-

nity to do so.

Bill now enjoys a balance in his life – how many of us can say the same? Does it take a disaster to realize the true blessings in life?

The pig industry, similar to many industries, is rapidly adapting to respond to the concerns of advocacy groups, labour challenges, price fluctuations, regulation overloads, family challenges and health concerns – to name just a few influences.

Because these crises become standard in our business does not mean that they need to be a standard for our attitude. Remember the dictionary definition of stress: force applied that strains or deforms the initial shape. If you cannot accept the new shape and enjoy it, the stress can break you.

It’s your choice to enjoy the stress and smile or not. Enjoyment leads to success, not the reverse.

*Die Broke* by Stephen Pollan, a great book that changed my life, proposes we should forget the idea of spending our entire lives saving and investing with the idea of idyllic retirement on a beach somewhere. His key principles are: quit today, pay cash, don’t retire and die broke. “The last cheque you write should be to the undertaker – and it should bounce,” says Pollan.

Spend your money while you’re

alive. The practice of accumulating a pile of money to pass on to your children is built on the mistaken notion that money has value in and of itself. The reality is that money is a tool; it is a means to an end. Spend your money while you can appreciate it. Plus, giving a pile of money to your kids can ruin them. Money or assets might be left to children or grandchildren at key points of need so the giver as well as receiver can both enjoy the gift.

Enjoy the moment, for few can appreciate the beauties that farmers take for granted. Nature surrounds us and we only need to look around to appreciate it.

You work in one of the most notable and worthy businesses – producing food. Pork producers are also blessed with the opportunity to work in a transparent industry where farmers share their production techniques, innovations, health protocols and labour-saving ideas readily. We take our blessings for granted.

If you couldn’t breathe, would you wish for anything different than what you are doing right now? Hakuna matata. **BP**

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



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