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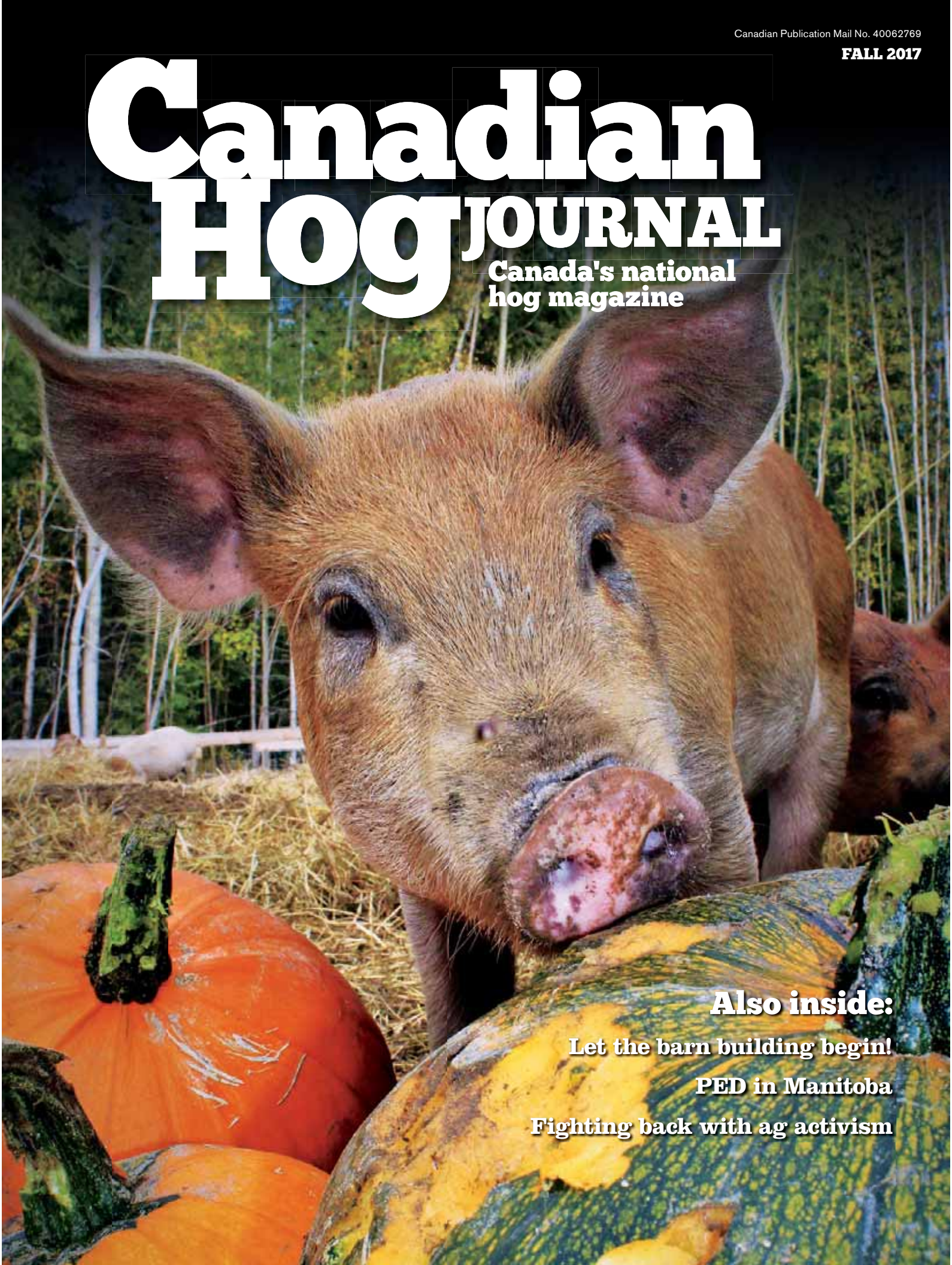
FALL 2017

Canadian Hog JOURNAL

Canada's national hog magazine



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Canadian Hog JOURNAL
Canada's national hog magazine

Canada's pork producers' technical and business information resource.

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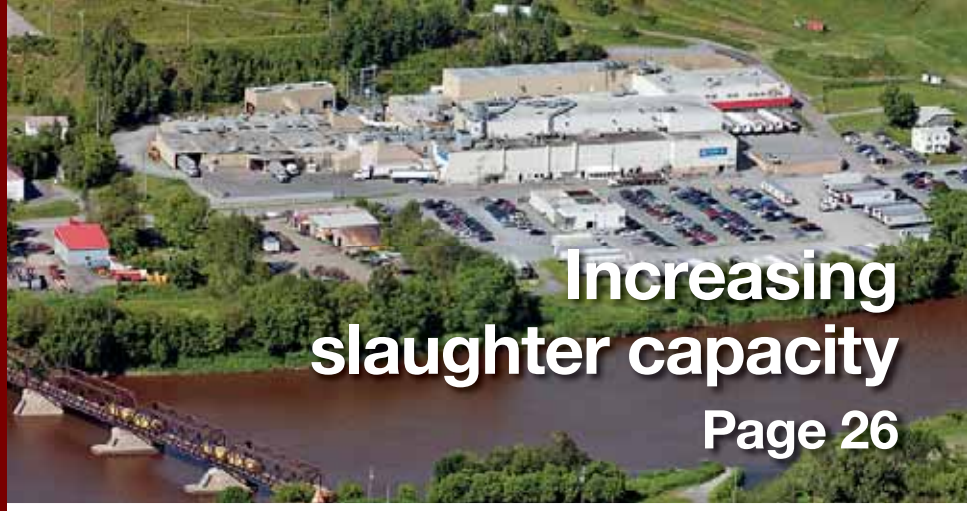
Cover Photo
Congratulations to Jackie Thiessen of Peers, Alberta, for her winning photo features on our front page! Front page photo contests are held every second issue, when our readers become our star photographers. Our next photo contest will be for our special Banff edition, so snap as many photos at the Banff Pork Seminar as you can and send them to sherimonk@gmail.com. The winner receives a plaque of the front page that features their work.



Increasing slaughter capacity

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Canadian Hog JOURNAL

Message from the editor

Welcome back, and happy harvest to you! Whether this reaches you before Thanksgiving, or after it, we wish you and yours all the best this autumn. We hope you get your fill of pumpkin pie, pork and turkey – we should all do our part to keep all the livestock sectors afloat!

Congratulations to Jackie Thiessen for winning our latest front page photo contest. Every second issue, we challenge our readers to submit their best photography that showcases the season or issue we're publishing. Our next contest is for our special Banff Pork Seminar edition, which comes out approximately six weeks after the seminar ends. So, take tons of photos, and keep those cameras busy! Even if you're just using your phone camera, many models take photos of a high enough quality to be used on our front page. People photos at the events and in front of the many creative trade booths are a fabulous idea. Try and capture people having fun, or taking in the amazing architecture at the hotel. Of course, the surroundings all on their own are amazing at Banff, so simply capture what inspires you, then send your best to me at sherimonk@gmail.com. Winners receive a mounted version of their front cover to display for family and friends, forever immortalizing their photography skills.

In less exciting housekeeping news, thank you for your continued patience as we sort through our mailing lists. We are making progress with our new subscriber system, but there continue to be the occasional hiccup. If you are a registered producer in BC, Alberta, Saskatchewan or Manitoba, and you have address changes, or want to sign up for a new subscription, contact your local producer group. If you are anything other than a registered producer in the four western provinces, contact Charlotte Shipp at charlotte.shipp@albertapork.com to make changes or to subscribe.

I was thrilled to hear from Drew DeBruyn, a young producer and an agriculture university grad, after our summer issue came out. He reached out to say how pleased he was with our research coverage, and to share his experience of sharing our story with the public, through Ontario Pork's Pig Mobile. His enthusiasm for what he does is inspiring! Check out his story, in his own words, in this issue! I would love to hear from more of you, and I know there are many of you just as passionate about our industry.

There are many events to get to in the fall and early winter, and while I can't make all of them, I will be in Saskatoon for the 40th Saskatchewan Pork Symposium, and I will also be at Le Porc Show, both of which are happening in November. And of course, I will see you in Banff in January! ■

Until next time,

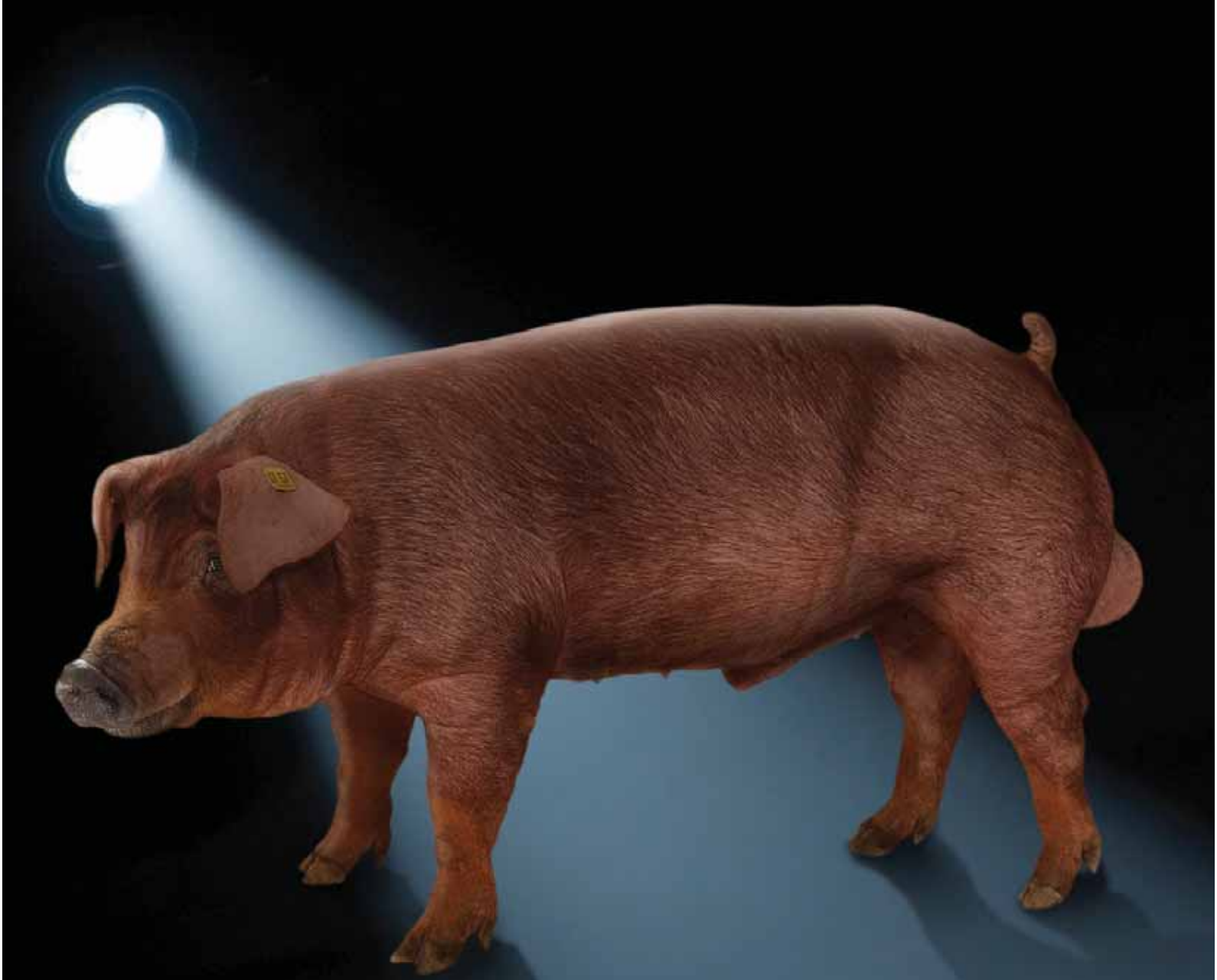
sherimonk@gmail.com

S Monk.

Sheri Monk

Editor, business manager

LOOKING AT BOAR LINES? START AT THE FRONT.



The **DNA Genetics Line 600 Duroc** is the most widely used terminal boar line in North America, surpassing all of the competition's mix-and-match lines. Customers know the difference: Rigorous, continuous genetic improvement that helps them move to the head of the line. And they're not moving back. See the light at dnaswinegenetics.com

DNA GENETICS
Greater gains. Improved performance

News and Views from Far and Near

Genesus on breeding a robust pig

Pius B. Mwansa, Ph.D.

Developments in pig breeding have led to considerable positive genetic changes in production traits due to direct selective pressure on traits such as growth rate and feed efficiency. These genetic improvements in efficiency and productivity, however, have seen attendant increases in high physiological demands, which may have unfavorable consequences on productive longevity of farm animals (Knap and Rauw, 2009).

Today, pigs are expected to perform in a variety of environmental conditions/challenges encountered in commercial operations. This versatility in farm animals was defined by Knap (2005) as 'the ability to combine a high production potential with resilience to stressors, allowing for unproblematic expression of a high production potential in a wide variety of environmental conditions'. This definition of adaptability is verbose but does capture the component elements more inclusively. Genetic companies regularly pay some attention to functional traits in their breeding programs, albeit, mostly in phenotypic selection consideration (for example health, fertility, locomotion, teat number, structural soundness, and mortality at various stages of life).

Furthermore, breeding programs expect genetic improvements made in nucleus units to translate into desirable improvement realized under commercial management/environment conditions. A genotype by environment (GxE) interaction occurs when genetic improvement at the nucleus level does not result in a very similar level of improvement at the commercial level. Similarity in genetic performance of the same trait in different environments can be measured by directly comparing the genetic expression of a given trait in both environments, this is commonly measured as the genetic correlation. As the genetic correlation moves away from 1.0 (perfect association in both environments) then the genetic expression of the trait is different in each environment.

Figure, 1. Genetic correlations for growth rate defined as a separate trait in each environment declined as the difference in mean growth rate between two environments increased (Li and Hermesch 2013).

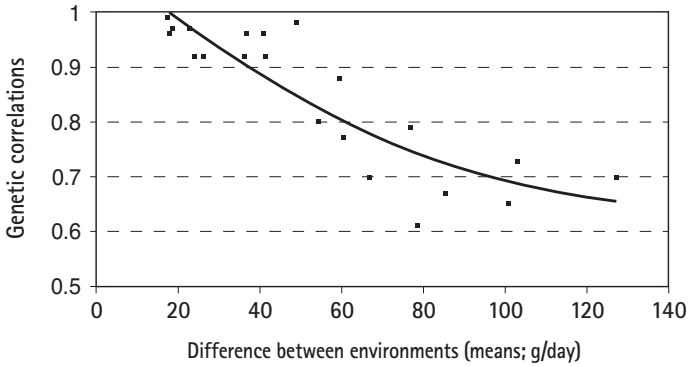


Figure 1 above is a graphical example from Li and Hermesch (2013), showing how the genetic correlation between growth rate in two different environments changed as the average difference in growth rate increased. Environments where the difference in average ADG was 40 grams/day or less had very similar genetic correlations (>0.90). However, as ADG recorded in two environments differed by 60 g/day or more resulted in lower genetic correlations and more variability in the genetic correlation values. Thus, in this example when the difference in average ADG was greater than 60g/day the genetic impact on expression of the trait was different in the two environments and clearly a GxE interaction occurred. Thus, the ADG in the two environments may be regarded as different traits in genetic evaluation systems in order to account for GxE interaction effect.

Breeding objectives aim to produce animals with a high-level of performance in a wide range of environmental conditions and management systems. Undoubtedly, breeding objectives should be defined

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Boehringer Ingelheim

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for commercial environments (not nucleus) and optimal selection indexes (tools) should account for GxE interactions that may exist for economic traits of interest. A very effective way to accomplish this is to incorporate commercial data along with nucleus data in the genetic evaluation of nucleus pigs. While this approach has been difficult to implement effectively in the past, the use of genomic tools has created new opportunities. Genesus has recently initiated a large research project focused on the use of genomics to enhance nucleus level selection by incorporating commercial herd data into its genomic evaluation system.

Selection of pigs with the inherent ability to achieve high level productivity in diverse environments is, for Genesus Inc., a high-ranking objective because it is a key to maximizing profitability for our customers in the pig genetic improvement value-chain.

New era kicks off with western Canadian expansion of Farmers Farmacy

A new era in farm retail featuring the latest in convenient online shopping services and direct-to-farm delivery options has rolled out across the Canadian prairies with the western expansion of Farmers Farmacy.

The pioneering e-commerce driven brand, previously available only in Ontario and the Maritimes, now offers full service to farmers across Manitoba, Saskatchewan and Alberta. Farmers can peruse and order from a full catalogue of over 1,700 items ranging from animal health products to barn equipment, maintenance supplies and work clothes – a full 23 categories of items are available.

Embracing digital retail

Access is available 24/7 via the online store at www.farmers-farmacy.com, along with four new pick-up and order points at Fortified Nutrition Limited locations in Lethbridge, Red Deer, Brandon and Winnipeg. Farmers Farmacy and Fortified Nutrition Limited are part of the Grand Valley Fortifiers Group of Companies (GVF Group), headquartered in Cambridge, Ont.

"We couldn't be more pleased to bring Farmers Farmacy to the West," says Ian Ross, president and CEO of GVF Group. "The world of retail and distribution is constantly evolving, with advances in e-commerce and on-demand, direct-to-customer options leading the charge. This presents exciting opportunities to bring innovative models and options to the marketplace – including new ways of bringing enhanced convenience, efficiency and value to farmers. We invite western farmers to visit our online store or learn more by visiting the pick-up and order points at Fortified Nutrition Limited locations."

Items available from Farmers Farmacy cover a complete range of options for dairy, swine, poultry, beef and sheep operations. Full multi-item orders can be made conveniently online, by phone, by fax or via the pick-up and order points at Fortified Nutrition Limited locations for pick-up within two weeks.

Built for new consumer landscape

"As paradigm-shifting new retail models reshape the consumer landscape, Farmers Farmacy is built for the emerging new environment while offering a unique specialized focus on farmer needs," says David Ross, vice president and chief marketing officer of GVF Group.

"A lot of the progress of Farmers Farmacy has happened very organically, driven by the evolution of the marketplace and our farmer customer base. The new western expansion is another natural next step. We look forward to building on the Farmers Farmacy legacy of serving farmers and the broader farming community with our new activity across the prairies."

Farmers Farmacy has experienced consistent strong

growth over its 20-plus year history. It started with humble beginnings as a service offered to Grand Valley Fortifiers premix customers, operated out of a back room at the original premix plant. "The initial idea was simply to provide a few additional items to our premix customers for their convenience," says Lorie Pepper, customer service manager for Farmers Farmacy, who has long been part of the team. "It took off from there. A few items became many items. The customer base grew from beyond the symbiotic relationship with our premix customers to a much broader marketplace."

SEC REPRO featuring two new products

The Extensible Electronic Tag Reader can extend from 45 cm to 120 cm (18'' – 48''), the weight is 300 grams, the battery last 20 hours, and it features communication by Bluetooth. At a cost of just $695, this reader is indispensable in loose housing operations.

Spectragen for livestock and food processing is a new disinfectant, possibly the first one in the Canadian market approved by Health Canada under new European standards. Using Biocid ingredients, Spectragen is efficient at 0.2 per cent on bacteria, 0.6 per cent on viruses and one per cent on fungi at 10°C after 30 minutes of contact, under high-level soiling conditions. Spectragen is effective on any kind of surface and in livestock buildings such as pig and poultry farms. Available in 5 L, 20 L, 60 L, 200 L, at a competitive price Visit www.secrepro.com or call (450)776-0596.

Focus on serving farmers

As the journey has continued, that original ethos of serving farmers has remained at the centre of the Farmers Farmacy brand and company culture, says Pepper. In June, Farmers Farmacy moved from the building it has occupied for 15 years to a new location with more than double the capacity with 23,000 square feet. "In addition to the milestones and innovations we have achieved with our catalogue, purchasing options and delivery capacity, just as integral to our success has been our ability to provide knowledgeable customer service from people who truly care about farmers and understand agriculture. People who know how the products are used can provide good advice on purchasing decisions."

The Cambridge-based team includes many who have been with Farmers Farmacy for many years. This same team will be directly involved in serving Farmers Farmacy customers in the western region, alongside members of the locally based Fortified Nutrition Limited team, says David Ross. "Farmers Farmacy takes great pride in the commitment of our people and our strong agricultural roots. Serving farmers and continually strengthening the value we provide to the agricultural community remains our focus as we shift to the future."

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Visit the Farmers Farmacy online store at www.farmersfarmacy.com and Pick-Up & Order Points at Fortified Nutrition Limited locations. Find more information on Fortified Nutrition Limited at www.fortifiednutritionltd.com and on the GVF Group at www.gvfgroup.ca.

New alliance between Farmers Farmacy and MS Schippers Canada Ltd.

The Grand Valley Fortifiers (GVF) group of companies is pleased to announce a new alliance that has been formed between Schippers Canada Ltd. and Farmers Farmacy® (a company within the GVF group of companies).

Launched September 1, 2017, Farmers Farmacy® became the master distributor of MS Schippers' HyCare™ focus products including: MS Topfoam, MS T&T Cleaner, MS Megades Novo, MS Dry Care Plus, MS Goldmix pH, Di-o-clean, MS Equal Coating, MS Support and Hoof Care.

With Farmers Farmacy® recent move to a 23,000 square foot "Costco style" facility at 455 Dobbie Drive in Cambridge, Ontario, there is significant capacity to take on the sale and distribution of MS Schippers products within Ontario. Utilizing Farmers Farmacy® storage and retail space, logistics and distribution and knowledgeable customer service staff, Schippers Canada Ltd. is confident that their existing customers will continue to have ready access and timely delivery of the MS Schippers HyCare™ products they have grown to know and appreciate. Over time Farmers Farmacy® will seek to integrate additional MS Schippers products that will incorporate well with their product offering.

In addition to forming an alliance between Schippers Canada Ltd. and Farmers Farmacy®, the GVF group of companies is pleased to announce the joining of both Paul and Arianne de Rond to their team. The de Rond's immigrated to Ontario from the Netherlands five years ago with Paul becoming a Schippers Canada Ltd. HyCare™ Specialist who services the hygiene and animal care needs of swine, poultry and dairy producers in Ontario. Paul's wife, Arianne has been responsible for the receiving, inventorying and distribution of MS Schippers products in Ontario. The new GVF roles for Paul and Arianne de Rond will focus on animal nutrition, farm audits and on-farm trial support, as well as include the ongoing support of MS Schippers product sales and service, now through Farmers Farmacy®.

The GVF group of companies and MS Schippers group of companies are both second generation family businesses that focus on providing leading edge nutritional, hygiene, animal care, and equipment products to livestock and poultry producers. Both of these companies have a mission to allow family farms to be more profitable and to create healthy and safe meat, milk and eggs that meet consumers' desires. With much aligned missions and focuses, both GVF and Schippers Canada Ltd. are confident that this alliance will be long-term and beneficial for the producers of Eastern Canada.

The GVF group of companies includes Grand Valley Fortifiers, Farmers Farmacy®, Direct Source Commodities, Fortified Nutrition Limited, True Foods and Valley Feeds. These companies and the teams within them work holistically and synergistically with hundreds of family farms in Canada and the United States with the core purposes of profitable farms, healthy food and improved lives.

Schippers Canada Ltd. with its head office in Lacombe County, Alberta, operates nationwide. They are part of the MS Schippers group of companies, based in the Netherlands, an internationally high-regarded innovator and supplier of hygiene and animal care solutions to the livestock farming community.

Looking at the MS Schippers' 50-year corporate history, they now operate in 41 countries, in 14 of which they have offices. The development of their well-researched HyCare™ principles has made them a world leader in sustainable livestock farm management practices through hygiene improvements. Livestock farmers using the MS Schippers HyCare™ products and methods experience significant benefits in animal health, their farm's financial results and ease of working. Above all the HyCare™ principles are recognized as a major essential element when working towards Antibiotic Free livestock farming.

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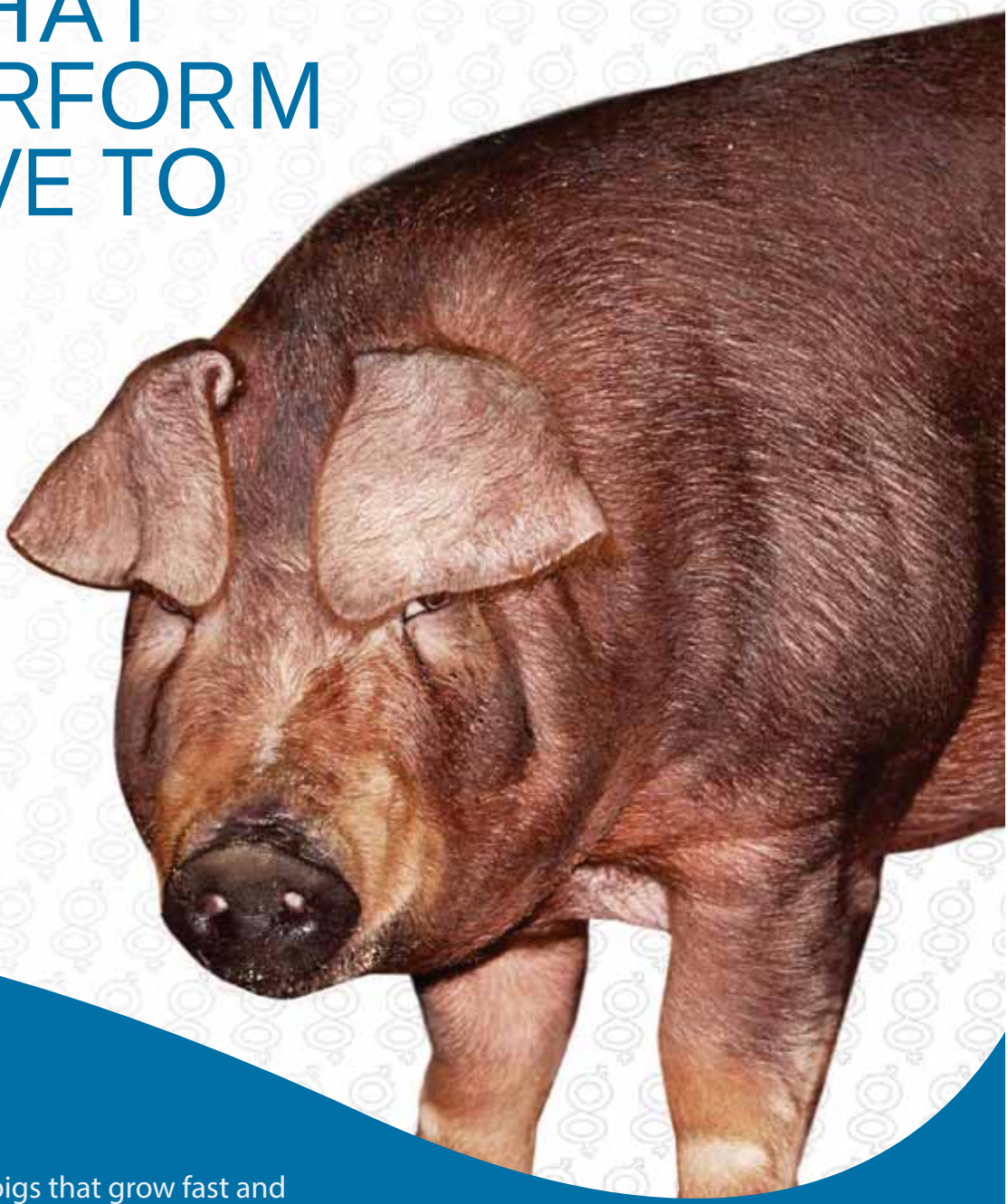
Fast Genetics™

PIGS THAT OUTPERFORM AND LIVE TO PROFIT



The Fast Duroc produces pigs that grow fast and convert well through all production stages.

This terminal sire line produces the most full-value pigs with excellent carcass quality.

www.fastgenetics.com

Brent Robinson elected chair of Canadian Centre for Swine Improvement

The Canadian Centre for Swine Improvement (CCSI) recently held their 2017 annual general meeting in Ottawa, Ontario. A new executive committee was elected, with Brent Robinson appointed as the new chair of CCSI. He replaces Rod de Wolde, who has served as the chair since 2013. CCSI would like to thank Rod for his hard work and dedication to both CCSI and the pork industry.

Brent Robinson is an owner of Vista Villa Farms along with his dad, Bob, and his brother, Jeff. Vista Villa Farms, a breeding stock supplier both domestically and internationally, was started by Bob and Rose Robinson and is celebrating 50 years in business this year. Vista Villa Farms is a partner of Alliance Genetics Canada. Along with being the new chair of CCSI, Brent is also a director on the board at Ontario Swine Improvement and a member of the Ontario Swine Health Advisory Board. Brent is married to Susan and they have five boys. Brent volunteers his time with his children's hockey and baseball teams.

Above: CCSI Board of Directors at the 2017 Annual General Meeting (Left to Right): Dave Vandenbroek, Keith Rasmuson, Marquis Roy, Bill Wymenga, Brent Robinson, Line Théroux, Wim Van Berkel, Normand Martineau, Rod de Wolde, Brian Sullivan (C.E.O.), Lee Whittington

Joining Mr. Robinson on this year's board of directors are Rod de Wolde (Ontario Swine Improvement), Normand Martineau (Centre de développement du porc du Québec), Marquis Roy (Olymel), Line Théroux (Canadian Swine Breeders Association), Wim Van Berkel (Western Swine Testing Association), Dave Vandenbroek (Alliance Genetics Canada), Lee Whittington (Prairie Swine Centre), Bill Wymenga (Canadian Pork Council) and Ken Hamoen (Sandridge Farms). CCSI would like to thank Keith Rasmuson for his six years of dedication and service to CCSI on the board of directors.

The Canadian Centre for Swine Improvement was created by the Canadian Pork Industry to provide leadership, coordination and services for swine genetic improvement. Its members include regional swine improvement centers in western Canada, Ontario, Quebec and Atlantic Canada, the Canadian Pork Council, the Canadian Meat Council, the Canadian Swine Breeders Association, and users of the Canadian Swine Improvement Program.

Translating scientific nutritional discoveries into on-farm solutions

Challenging the norm and thinking differently about animal nutrition and gut health – this was the overarching message among some of the most innovative, scientific minds in the animal nutrition world during the recent Vetagro International Forum (VIF) held near Rome, Italy.

The event, hosted by Vetagro, drew more than 200 leading production system nutritionists and university researchers from around the world who shared their latest scientific information and insights on gut health, including preventing damage to the intestines caused by disease, nutritional challenges or environmental challenges, all in an effort to better understand the role of nutrition in maintaining healthy animals. The information and opportunities discussed during this forum reinforce the unique perspective and approach Vetagro brings to the U.S. poultry and swine markets as a global leader in animal nutrition microencapsulation. Forum speakers discussed the impact of

stress on animal health and performance, as well as the production challenges in an era focused on reducing antibiotic use.

R. Dean Boyd, PhD, technical director and nutrition leader for The Hanor Company, emphasizes the importance of nutrition in gut health during the weaning period. "In the stressful weaning period, animal nutrition plays an important role in the animal's health and productivity. If an animal's diet doesn't include quality, balanced ingredients and if we don't respect the consequences of a poor diet, it's likely that pigs will get sick."

Boyd explains that he has tried a nutritional product that is a combination of critical acids and essential oils and has seen good results. "It has been commonplace for us to add acids to diets of pigs that are weaned – during that early transition. But in the U.S. we tend to feed small amounts of acids that weren't very repeatable in their effect," he says. "We decided to come to Europe – to get a European perspective – where we feel they have been a bit more aggressive and the results more repeatable. The product that we use is Vetagro's AviPlus®. They have done such a good job of combining the critical acids with two specific essential oils that – in combination – deliver reduced scours, but also deliver on better feed conversion. The feed conversion, in essence, pays for the product. And the thing I was looking for – reduction of scours, which leads to less of a need for antibiotics – is free."

Even with a stepped-up nutrition program, Boyd says that animals will sometimes get sick and that's when antibiotics are needed for treatment purposes.

Randy Mitchell, PhD, MBA, MS, vice president of technical services for Perdue Foods, is responsible for the company's poultry business and has a similar position. "Fifteen years ago, we saw that consumers were becoming more concerned about antibiotic use in poultry, and we took a concerted effort to give less antibiotics and use them less routinely. Today, all of our chicken production is 'no antibiotics ever,' except in instances when birds actually get sick," he says.

What has replaced antibiotics in Perdue's chicken facilities? He credits sanitation for playing a key role. "Understanding hatchery sanitation was probably the thing that took us the longest because it's complicated and a critical step," he says. "It takes work from both health and nutrition perspectives, at every point in the chain, from the breeder farm to the hatchery to the grow-out. It's also important to have the farmer on board because the farmer is responsible for the overall care of the flock."

He advises that from a feed standpoint the nutrition needs to be "stepped up" to make sure animals are fed very digestible protein sources and a balanced protein diet.

While these efforts work the majority of the time, Mitchell says that occasionally a flock gets sick. "Our veterinarians determine when a flock needs to be treated. If that's the case, they are treated and the product is diverted into another use stream that doesn't get a "no antibiotics" label, he explains.

According to Andrea Piva, PhD, president of Vetagro, the VIF was conceived eight years ago to be a unique platform for scientific and business engagement among university researchers and livestock and poultry company nutritionists. "Vetagro is committed to continuous exploration of science to advance our research to better understand how metabolism works in the animal, so we can use innovative technologies to advance animal nutrition," Piva says. "The VIF is an excellent way to gather and share information."

Vetagro is a science-driven, industry-leading microencapsulation animal nutrition

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company bringing a decidedly different approach to performance and growth. Specializing in novel combinations of nature-identical nutrients and additives to help maximize animal nutrition to meet today's production needs, it is the only company in the world with more than three decades of experience in animal nutrition encapsulation.

Vetagro has been in the U.S. market since 2012 focused on working with university researchers and swine and poultry integrators nutritionists to evaluate and use its products in their operations, with positive outcomes. For more information, go to www.vetagro.com.

New Hypor Libra* sow reduces labour costs, increases profitability

The new Hypor Libra* (pronounced Libra star) sow balances traits in piglet quality, mothering ability and sow longevity to increase the number of pigs that employees can manage and lower the labor costs from farrow to wean.

"The cost for labor is one of the highest expenses on the farm – second only to feed and housing, says Hypor director of global operations Jeroen van de Camp. "We developed the Hypor Libra* to achieve the same production results with a lower labor cost."

By improving the mothering ability and longevity, Hypor geneticists were able to lower the amount of time and labor spent managing gilts and spent in the farrowing room to increase the number of piglets-per-hour.

The parameter, piglets-per-hour, is used to calculate the number of pigs that one person can manage. For example, a 1,200-head sow facility that produces 30 piglets per sow a year with 3.5 full time employees (2,070 hours a year/employee) is managing five piglets per hour:

1,200 sows x 30 weaned/sow per year = 36,000 piglets produced/yr
3.5 employees x 2,070 hours/full time = 7,245 hours worked/yr
36,000/7,245 hours = 4.96 piglets-per-hour.

"If you have a sow that is able to maintain high production with less work and manage herself, then you are immediately paid for the hours with a higher income and less labor expense," says van de Camp. The Hypor Libra* averages five piglets -per-hour on farrow-to-wean operations—the industry average is under four piglets-per-hour.

Quality pigs require less time and labour

"By increasing the number of piglets the producer can manage per hour, the Hypor Libra* lowers the labor cost per hour to raise each pig by $1.10 USD to $2.42 USD 0.98 EUR to 2.25 EUR)," van de Camp explains. For a 1,200-head sow farm that is producing more than 36,000 piglets a year, producers save between $39,600 USD and $87,120 USD (€35,280 EUR – €81,000 EUR) in labour costs. To increase the number of piglets per hour, Hypor geneticists select sows that produce large and uniform litters.

Geneticists measured the birth weights of individual pigs for several years to select the sows that produce the most uniform litters. Unlike taking the average litter weight, individual birth weights take into account if a litter has small or large pigs – and how that will affect litter uniformity and the number of full value pigs.

Research shows that uniformity is highly correlated with pig quality. Pigs from a uniform litter are more robust, have a higher survivability and are more likely to be rated at full value by the packer according to a presentation at the 2016 International Pig Veterinary Society Congress in Dublin by John Mabry of Iowa State University: How to Deal with Success in Genetic Improvement.

Sow Longevity, Litter Index Improve Profit Margins

In addition to collecting individual birth weights, Hypor geneticists also measure the 14-day weights of each piglet to ensure that the Hypor Libra* produces quality pigs—and is able to raise them.

"The 14-day weights show us how well piglets are growing during the lactation period and allow us to assess the milking ability of the sow," van de Camp says. "The Hypor Libra*

CONTINUED ON PAGE 16

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"Retrofitting our barn with Gestal 3G was fairly simple. We installed the units ourselves, including hanging and setting up the Gestals, and having them talk to our computer.

With Gestal, our life has become simpler!
No need to train many sows for loose pens as we used to do with conventional ESF. On top of being more convenient, it saves us money on labour!

Gestal is a maintenance man's dream! The crate is heavy built. It's so simple, there's not much to go wrong! And the feeders are wireless, meaning that even if your computer crashes your animals will be fed anyway.

From the perspective I now have from having worked with conventional ESF for years, I would have loved to have had Gestal when we opened this barn!"

Corby King, Mansion Farm
Allen Oklahoma
3000 sow unit

Gestal 3G

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is capable of producing more than 30 piglets a year that reach 14 pounds (6.3 kilograms) in three weeks with minimal cross fostering and without relying on milk replacer." Because the pigs get off to a good start, they are less likely to get sick later in life and ultimately require less labour.

"Hypor geneticists carefully select the sows that continue to produce large litters of quality piglets past the first parity," van de Camp explains. The Hypor Libra* is capable of producing 2.5 litters of quality pigs each year for more than six parities.

Longevity increases the profitability per sow while at the same time reducing the amount of labor spent on bringing in replacements. This provides pork producers with more time to manage their farm.

Balanced Traits Increase Profit, Lower Costs

The Hypor Libra* increases production and lowers labor costs by balancing traits, such as piglet quality and longevity. "The combination of these traits is only possible when they are highly balanced," Bronsvoort says. He explains that the Hypor Libra* is extremely good in all of those traits. "To be profitable in the industry today, pork producers need a sow that is able to increase production and lower costs."

The Hypor Libra* is the world's most 'prolificient' sow – the sum of prolificacy and efficiency. She combines 10 years of genetic improvement, state-of-the-art technology and the top Hypor Landrace and Large White genetics to help pork producers to reach for the stars.

New geneticist at Topigs Norsvin USA

Topigs Norsvin USA recently announced that Dr. Jenelle (Kleinhesselink) Dunkelberger has joined its staff as geneticist. Dr. Dunkelberger will be based out of Topigs Norsvin's Burnsville, MN office. In her new role, Dr. Jenelle's responsibilities will encompass research and development activities (USA and International), sales and marketing support, customer technical service, and allied industry support.

Jenelle Dunkelberger is a recent graduate of the Animal Science Department at Iowa State University with a PhD in genetics and a minor in statistics. In the summer of 2016 Jenelle spent two months as a research intern at the Topigs Norsvin Research Center in Beuningen, The Netherlands. The title of her thesis is, "The role of host genetics in susceptibility to viral disease in pigs."

"We look forward to Jenelle bringing her education, training, and expertise to Topigs Norsvin," comments Mike Terrill, president and CEO of Topigs Norsvin USA, "She is a dynamic and motivated person and a welcome addition to our team."

"I am very excited to begin my career with Topigs Norsvin USA," adds Jenelle, "and look forward to contributing to their unique and innovative research and development program."

Hypor partners with Nugeporc to supply genetics to producers in the Dominican Republic

Hypor is pleased to announce that it is partnering with Nugeporc to supply quality genetics to pork producers in the Dominican Republic as well as for the rest of the Greater and Lesser Antilles.

Nugeporc, a company that was formed by leading pork producers, is currently building a 200-boar AI stud to exclusively house Hypor boars. An initial delivery of 100 great-grandparent (GGP) boars are expected to be imported into the Dominican Republic in June, and will begin supplying genetics during the second half of 2017. Hypor will start supplying dam line and boar line genetics for an initial sow base of 9,000 sows.

In the near future, Nugeporc is planning to build a nucleus facility to produce high quality Hypor genetics in the Dominican Republic. Hypor will export top breeding stock from its nucleus facilities in Canada to the nucleus facility in the Dominican Republic

on a regular basis to maintain genetic improvement.

The partnership is the result of Hypor's expansion in Latin America and Nugeporc's objective to partner with a global genetic company.

"Hypor has the product portfolio and the flexibility to adapt business to meet the needs of Nugeporc," says Hypor general manager of Americas Luis Prieto Garcia. He adds that Nugeporc evaluated other global genetic companies in 2016 before selecting Hypor as a genetic partner. "Hypor has the technology and technical support that Nugeporc is looking for to continue to be competitive in the future."

Hypor will train Nugeporc members on Hypor's production and quality standards to ensure the business has a smooth start. The training will take place before the pigs arrive at the new AI stud.

"In addition to training, Hypor's technical team and specialists are providing support to Nugeporc throughout the entire process to make sure this is a successful partnership," Prieto says. "Successful partnerships with distributors, like Nugeporc, are a vital part for Hypor's expansion in Latin America." Hypor currently has a strong presence in Canada, the U.S. and Mexico and has partners in Colombia, Ecuador, Guatemala as well is expanding its reach to include Peru and Brazil in 2017.

"We look forward to partnering with new distributors throughout Latin America," Prieto says. "And to continue supporting American producers with our balanced product portfolio and technical solutions."

Topigs Norsvin Canada Inc. announces new Manitoba business development representative

Topigs Norsvin Canada announced recently that Russ Penner has joined its staff as Manitoba business development Representative, based

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out of the Winnipeg head office. In his new role, Russ will be focused on business development in Manitoba.

Russ grew up on hog farm and continued in swine production after finishing high school.

With 20 years working full time in swine production, many of those years were working with Topigs Norsvin genetics. In the past three years Russ was an owner/partner in a 1,500 sow farrow-wean unit and was also the manager of the barn. "His experience in managing staff and working with Topigs Norsvin products will be valuable to existing and future clients," said John Sawatzky, Canadian sales manager. Russ also has considerable experience in the swine industry, having served for many years as a district advisor with Manitoba Pork Council.

"I'm extremely excited to take this position with Topigs Norsvin and look forward to all the opportunities with Topigs Norsvin. In my free time I'm an avid sports guy with a love for all sports especially hockey, golfing and baseball," said Russ.

Russ can be reached at (204) 770-1885 or russ.penner@topigsnorsvin.ca

Topigs Norsvin Canada is a leading swine genetics supplier in North America. Topigs Norsvin produces and develops sound, profitable pig genetic programs and breeding systems for commercial hog production and is one of the largest genetics companies in the world with business activities in more than 55 countries.

AP introduces new positive pressure ventilation for reducing virus risk

An advanced, positive pressure ventilation system that protects against viruses in pork production was recently announced by AP (Automated Production Systems).

Brian Rieck, AP product manager, explains that positive pressure ventilation forces filtered air out of a building, reducing the chance of exposure to airborne pathogens which are more prevalent with traditional negative pressure designs.

"AP's positive pressure system is an effective solution for maintaining healthy air quality for animals," Rieck says. "This process prevents unfiltered, outdoor air from entering the animal living areas that might otherwise be compromised from air leaks or open air inlets in a negative pressure environment."

In the AP system, outdoor air passes through Camfil high-particle capture filters and continues through an evaporative cooling system. It is then forced into the animal living space via ventilation fans and through tunnel doors and/or ceiling inlets, depending on circulation needs. Finally, air is forced out of the building via wall shutters and actuated exhaust systems.

The ventilation process is connected to AP's integrated EDGE system, which enables pork producers to set, monitor and manage all of the environmental functions in multiple barns or rooms from a single controller, using one interface.

"Positive pressure systems are essential to any successful virus protection plan," Rieck

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Osborne Introduces New Wean-to-Finish Feeder

Finding the most efficient method of feeding pigs has been a never-ending quest for producers and equipment suppliers alike. Hand feeding and automatic, gravity-flow feeders dominated the industry until the development of mechanical-flow feeding in the 1980s. This development revolutionized the industry and the only mechanically-operated feeder, the Osborne Big Wheel® Feeder, quickly became the number one selling hog feeder in the U.S. However, as the industry moved toward wean-to-finish, producers often found no commercially-available feeding systems were adequate in a wean-to-finish environment. The best gravity-flow feeders worked well for newly weaned pigs, but as pigs grew, play waste and overloading of the trough became a maintenance nightmare. Alternatively, mechanical-flow feeders provided never-before-seen feed savings, but sometimes required assistance to help pigs get started on the feeder.

Now, Osborne Industries, Inc., the industry-leading innovator in pig feeding, is pleased to announce its latest advancement in their signature line of "no-waste" pig feeders. The new FAST Start™ wean-to-finish feeder features all the no-waste, feed saving aspects of the Big Wheel family of mechanical-flow feeders, but operates in gravity-flow mode for newly weaned pigs. The feeder then automatically converts to mechanical-flow as pigs grow.

Osborne's president and CEO, Mr. George Eakin, said, "The FAST Start Feeder is an answer to the age-old problem of designing a feeder that is capable of feeding very young pigs, and yet, prevents the excessive feed waste that occurs when pigs grow. Traditional gravity-flow feeders start very young pigs easily, but adjusting them to prevent feed waste throughout the growing cycle is a management nightmare."

Eakin continued, "The FAST Start Feeder combines gravity-flow feed delivery for newly weaned pigs with mechanical feed delivery for finishing pigs, which saves feed and ensures feed freshness. The conversion of the FAST Start Feeder from a gravity-flow feed delivery to the feed-saving mechanical-flow delivery is done automatically by the pigs. This automated feature allows pigs to grow from wean to finish on a single feeder without any adjustments, and yet save feed, ensure feed freshness, and grow animals efficiently."

When weaned pigs are put on the feeder, small slides in the feed hopper bottom are open, allowing feed to freely flow into the trough. As pigs grow, they begin turning the multi-spoke feed wheel in the bottom of the trough, which closes the slides on the feed hopper bottom. A feed sweep, located in the bottom of the feed hopper and attached to the feed wheel, sweeps feed past the cone and out of the hopper to the trough. Feed falls through the center hole into the trough, where the feed wheel dispenses it to the pigs. Feed stops flowing when pigs stop moving the wheel, allowing for the automatic conversion from gravity to mechanical flow.

Based on numerous on-farm trials by users, the FAST Start Big Wheel Feeder has been observed to meet all the critical performance standards cited by leading veterinarians for wean to finish, but without losing any of the well-known Osborne "no-waste" feeding during finishing.

Made of abrasion and corrosion-resistant RTM-molded plastic, a material Osborne developed and perfected over the past 30 years, the feeder operates with minimal maintenance for years. ■

Story Ideas?
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Let the barn building begin!

In Ontario and beyond, construction related to herd expansion is underway

By Treena Hein

Hamland Farms near Orilla recently began construction on a new pig barn – and not to replace an old barn.

No, this new structure is being built to house an expanded farm herd, one sign among others that the pork industry is bouncing back in Ontario – and beyond.

The new Hamland barn will be a nursery, explains owner Bruce Clark, who with his wife Beth, farms crops with their son Terry, and swine with their son Ian. The Clarks have been in the swine business for 44 years and have three sites of their own, in addition to having hogs fed for them through 17 other operators. A total of 30,000 Hamland hogs go to market every year, raised with feed made on-farm from Hamland crops and purchased grain.

"Our current weakness is the nursery phase," Clark explains. "This new nursery will consolidate our two existing ones and when it's finished, we'll be able to produce about 50,000 pigs a year."

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New herd-expanding construction will begin at Hamland Farms near Orillia, Ontario this fall. Hamland Farms is owned by Bruce Clark, who with his wife Beth farms crops with their son Terry and swine with their son Ian (shown here with his wife Sabrina). Photo by Sabrina Clark.

The increased number will only go to the feeder stage however, for the time being anyway. Because there is currently no room for any more processing in Ontario, Clark says Hamland Farms will sell the additional feeder pigs into Quebec and the U.S., but will add more finishing if provincial slaughter capacity increases.

"There is good demand in Quebec and very good demand from the U.S.," he notes. "We've been approached by American companies for feeder pigs. It's far less expensive to transport feeder pigs than slaughter hogs, and we need to continue to grow to stay in the business."

Clark also notes that meeting many of the National Farm Animal Care Code of Practice requirements is expensive – for example increasing the space allotted per piglet – and that his farm business has to cover those expenses through more units of production. "If we would stay at present space and meet the Code requirements," he says, "we'd have to have less pigs and we just can't do that."

The new nursery will accommodate batch farrowing, up to 4,000 in a group, so the cost of building will be reduced compared to a building design with more rooms. The family may install an electronic feeder (which dispenses feed as it is eaten and therefore reduces waste) of the type that they're trying out right now in an existing nursery, but Clark says they're not sure yet if the cost will be worth it. They're also looking at different systems for in-floor heating because he says it provides heat where the pigs need it. All the manure from the expanded herd will be used on Hamland crops, so Clark is looking forward to efficiencies on that side as well. Operation of the new nursery is planned for December.

"We are confident that building for expansion will occur in the coming years and we have lobbied for support for this.... It is hard to say just how much the provincial herd will grow over the next year or two, but I sense confidence in the government, producers and processors to move forward." ~ Les Éleveurs de porcs du Québec's strategic advisor Vincent Cloutier

Overview in Ontario and Quebec

Ontario's entire sow population, according to Ontario Pork, was 433,000 in 2004 before dropping quickly and bottoming out to about 300,000 in 2008.

"Ontario is different from western provinces in that there wasn't a moratorium, but of course it's been tough for the last 10 to 15 years," notes Patrick O'Neil, Ontario Pork marketing manager. "The recovery started in 2015 and the provincial sow herd stood at 317,000 as of January 1, 2017."

O'Neil says it looks like expansion will continue due to better profitability and a better U.S. dollar exchange rate. However, he also says the current situation of limited slaughter capacity in Ontario is tempering the rate at which the sow population will increase.

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[a]Canadian Veterinary Medical Association guidance on the prudent use of antimicrobial drugs, 2014.
[b]Data on file.

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In Quebec, pig farmers are confident of the industry's future expansion but are being careful to measure risk, according to Les Éleveurs de porcs du Québec's strategic advisor Vincent Cloutier. "The demand for pork and quality meat around the world is increasing and our dollar is low," he notes, "but competition is fierce and margins are tight."

In 2002, nearly 400,000 sows were farmed in Quebec and by 2005, that had dropped to 375,000. By 2016, it was 300,000, but Cloutier says slaughter hog weight started increasing around 2008, and so total provincial production weight has therefore stayed steady at almost 700 million kg since that year.

"We are confident that building for expansion will occur in the coming years and we have lobbied for support for this," Cloutier notes. "In the 2017 budget, the government of Quebec set aside $95 million for the support of new barn development in all sectors to address energy efficiency, welfare concerns and so on. At this point, we don't know how much of that will go to the pork sector or what form the support will take. It is hard to say just how much the provincial herd will grow over the next year or two, but I sense confidence in the government, producers and processors to move forward."

New sow barn at Suncrest Hutterite Colony in Kleefeld, Manitoba, built in 2016. Photo by Bob Kleinsasser.

The prairies

In Saskatchewan, the total provincial hog inventory is now roughly back to where it was in 2007. Now that the inventory of existing barn units has been purchased, renovated and repopulated, Mark Ferguson notes that "we are seeing increased interest in new builds because that is the only avenue left to get into the business."

The manager of industry and policy analysis at the Saskatchewan Pork Development Board says every plant in western Canada is looking to operate at capacity, and that hog prices have been strong over the past five years.

"Certainly strong consumer and export demand and the lower Canadian exchange rate are the main factors driving prices of pork and hogs higher," Ferguson explains. "Saskatchewan's wide open spaces and abundance of low-cost feed grains give the industry a competitive edge [and] the downturn in the provincial economy also provides an opportunity for more competitive construction costs."

Sask Pork has set a goal of adding 100,000 finishing spaces by 2018 and Ferguson says they are confident about meeting the goal.

Alberta has seen about five new farrow-to-finish operations built in the last year, but Alberta Pork Executive Director Darcy Fitzgerald says decisions among producers to build barns for the purpose of herd expansion will be based strongly on overall perceived future revenue.

"There needs to be a positive expectation that the investment in a multi-million dollar facility will have a fair return for the effort producers and their families put into producing the world's best pork," he says. "We definitely have the ability to produce pigs and ship high-quality pork, we just need to work as a whole industry to develop the system that has all in the value chain focused on the same mutually-beneficial goals."

Manitoba seems to be the province where most new pig barn construction will proceed. Manitoba Pork expects between 50 and 100 new barn applications over the next five years and this calculation, says sustainable development manager Mike Teillet, is based on what's required to bring the Brandon Maple Leaf Plant to full capacity.

"There is good demand in Quebec and very good demand from the US. We've been approached by American companies for feeder pigs. It's far less expensive to transport feeder pigs than slaughter hogs, and we need to continue to grow to stay in the business."
~ Bruce Clark, owner, Hamland Farms

"Right now, that plant needs about 1.1 to 1.2 million more pigs," he explains. "If we assume 6,000-space feeder barns are built, this would result in about 18,000 pigs per year per barn. This means we would need about 61 barns of that size...However, of course we don't know how big producers will build their barns."

Other unknowns, Teillet adds, are whether some of the new barns will be sow barns or will be built solely for pigs bound for the U.S.

It's not easy to say how much of the new construction is due the government of Manitoba's recent commitment to remove unnecessary requirements from barn building codes or to other factors. Teillet doesn't see that these regulatory changes have yet had an impact, and although they may be creating a more positive economic outlook, they aren't expected to substantially lower construction costs. He notes a more important regulatory change to be elimination of the 'moratorium' clauses in the provincial Environment Act, yet to receive final legislative approval – administrative improvements that will speed up and streamline approvals, not lower environmental standards.

In the end, Manitoba Pork attributes most of the interest in building to pent-up demand. "We have built so few barns over the last eight or nine years," says Teillet, "added to the fact that we had a de-facto moratorium in place since 2011 – and with the shortage of pigs at the Maple Leaf plant along with decent hog prices for the last three years, plus the increase in the U.S. dollar, some incentives from Maple Leaf and some improvements in lending practices from the FCC – these have all led to a demand for more pigs and therefore more pig barns." ■

Increasing slaughter capacity

As herd expansion continues in Eastern Canada, slaughter capacity must also increase

By Treena Hein

Expansion of the sow herd in Ontario will continue due to better profitability and a better U.S. dollar exchange rate, according to Ontario Pork, but the current situation of limited slaughter capacity is tempering the rate by which the sow population will increase. According to Ontario Pork, recovery of the province's sow population started in 2015 and stood at 317,000 as of January 1, 2017.

"Slaughter capacity has been an issue since three or four years ago, when we lost Quality Meats in Toronto," notes Ontario Pork Chair, Eric Schwindt. "The company filed for bankruptcy and had been processing 30,000 pigs a week, so the industry in this province actually went from having a little too much processing space to not having enough."

"We recognize that building a plant is a big investment, which requires the company to have an adequate supply of pigs, a market for the processed meat, a good business atmosphere and access to labour. We need to make sure the business environment here in Ontario is competitive with neighbouring jurisdictions." ~ Ontario Pork Chair, Eric Schwindt

Right now, Ontario pork farmers are sending just over 20,000 hogs a week to Quebec, and 12,000 hogs to the United States. Schwindt says there are some fees and that border crossings have been fairly smooth in recent years, but there is always risk when trading across borders. To ship to Quebec, it costs a producer $7 to $8 per pig and at least that to the United States. Schwindt adds that "right now under the current regulations and National Farm Animal Code of Practice we can make it from most farms in Ontario to the plants, but moving hogs to Manitoba for processing is not feasible as we'd have to unload. It would also be nice to have more processing jobs in Ontario for the public and for the provincial government."

Ontario Pork board Chair Eric Schwindt. Photo courtesy Ontario Pork.

Todd Malcolm and his family are among the vast majority of eastern and central Ontario pork producers who have shipped hogs to Quebec since Quality Meats closed. Malcolm is an Ontario Pork board delegate and the president of the Kawartha Lakes division of the Ontario Pork Producers association. He co-owns Maltheb Farms near Oshawa (300 sows farrow-to-finish and cash crops) with his brother Jason and father Terry. Almost all their hogs are shipped to Quebec under contract with Olymel, with a few going to local markets. Todd says having another processer build a pork plant in Ontario would be a big plus.

"More packers mean more bidding and so it's more competitive for the industry," he says. "When a packing plant shuts down as Quality Meats did, we have to take the price that's available, in this case from Olymel. And having a plant in Ontario that's closer, well, the closer you are, the less freight cost you have. And obviously there are direct jobs and indirect jobs. This area could use that."

Malcolm is also excited about the opening of a new pork processing plant in Coldwater, Michigan in terms of having

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another bidder (Clemens Food Group) for his hogs. The 550,000 square foot plant began operation in September, processing 10,000 hogs a day and creating 830 jobs. The total investment in the plant was over $250 million USD, with $12.5 million USD of coming from 'Community Development Block Grant' funds for infrastructure developments, land purchase and workforce training. The City of Coldwater contributed $4.5 million USD for things like water and sewage main extensions and a new municipal electric overhead distribution line.

Clemens' director of hog supply, Dan Groff, says his company has had many conversations with Ontario hog producers and believes they will find ways to work together in the future. However, he adds that "There is no defined timetable for hogs from specific locations. We will ramp the plant up to capacity over a six-month period, and how that process unfolds will determine our ability to purchase hogs in 2018."

Schwindt says the plant will help the Ontario pork industry, in terms of having one more buyer for hogs. "It's not the whole solution, but it helps," he observes. "And we still have to remember, there's the border."

An aerial view of the Olymel Yamachiche plant. Photo courtesy Olymel.

Meanwhile, Ontario Pork is communicating with parties within Canada who have expressed interest in closing the provincial processing gap. "Sofina would be hard pressed to expand is my understanding, and Conestoga has been expanding, but they'd have to double in order for Ontario pig farmers to not have to ship pigs out of the province for processing," notes Schwindt. "We recognize that building a plant is a big investment, which requires the company to have an adequate supply of pigs, a market for the processed meat, a good business atmosphere and access to labour. We need to make sure the business environment here in Ontario is competitive with neighbouring jurisdictions. We have a good relationship with the government and we don't always agree but there is good dialogue and we can express our concerns. The processing problem is not a simple one, and it won't be a simple solution, but we'd just like to find a partner to build one more reasonably-sized plant in Ontario and we're in great shape."

An aerial view of the Olymel Vallée-Jonction plant. Photo courtesy Olymel.

Breslau, Ontario-based Conestoga Meats cannot comment on any possible plans for plant expansion or building right now. David Thompson, vice president of sales and business development, can say that in terms of the overall current provincial business environment, politically and otherwise, things are positive and there is good support in place for Ontario's pork industry to grow.

In December 2016, the company received an Ontario Food Exporter Award, which is presented to companies by the provincial government to recognize significant growth in exports and successful expansion into new markets. Conestoga Meats first entered the export market in 2002, shipping to the United States. Now, the firm ships to over 20 countries.

Sofina Foods had no comment about possible expansion of their Ontario pork plant or about any possible building plans.

Quebec's situation

Between 2002 and 2005, Quebec's sow population dropped from almost 400,000 to 375,000. By 2016, it had dropped to 300,000, but an increase in slaughter hog weight that started around 2008, means that total provincial production has been steady at almost 700 million kg since 2008.

Quebec-based Olymel has invested significantly in growing provincial pig slaughter capacity in that province and elsewhere. In total across Canada, the firm slaughters 145,000 pigs a week, with 30 per cent of total pork processing activity being further processing and 70 per cent in production of fresh pork products. Of their 23 plants across Canada in five provinces, five are devoted to pig slaughtering, one in Alberta (Red Deer), and four in Quebec (Princeville, Saint-Esprit, Vallée-Jonction and Yamachiche).

Last year, Olymel invested $25 million at its Saint-Esprit plant. "Refrigeration and slaughtering capacity was upgraded and expanded to bring the slaughtering capacity from 30,000 to 40,000 pigs a week," explains Olymel corporate communications officer Richard Vigneault. "We added 35,000 square feet (to the plant size) and now the total is 215,000 square feet, and total workforce there are 1,200 people." Olymel has also started installing CO2 stunning systems at Saint-Esprit and at all its other slaughtering plants, which Vigneault says will reduce animal stress and improve animal welfare as well as meat quality. That will be completed in May 2018.

The Yamachiche slaughtering, deboning and cutting plant (owned by ATRAHAN – a division of Olymel) is located close to another pig plant owned by Lucyporc, and these facilities are now being merged. The Olymel-Lucyporc partnership will see all employees working at Yamachiche after an $80 million upgrade and expansion is complete in two years. The combined plant will support 1,200 workers processing value-added pork products.

Vigneault notes that while Olymel is always looking for opportunities, it has no immediate plans to buy or build a pig slaughter and processing facility in Ontario.

"We have invested quite a bit in the last three years – $330 million – in our Quebec and Canadian pork operations, and we are concentrating on finishing those projects."

Olymel owns and operates three further processing plant in Ontario, one for pork in Cornwall and two for poultry in Brampton. ■

Manitoba's war on PED

By Sheri Monk

It's been a tough year for Manitoba's pork business. The PED cases started in early May, and despite the industry's proactive measures and a fast response, they just kept on coming.

"We thought we were getting on top of it and then it started getting into some of the bigger systems. And then it became more awkward because it got into some sow barns – very large sow barns – and of course that immediately meant that there were going to be nurseries and finisher barns with pigs being sourced from those barns," explained Andrew Dickson, general manager of Manitoba Pork.

PED is a tough beast to slay. It spreads easily, it is resilient, and it doesn't take much of a dose to cause an infection.

"We're not sure exactly how it got into some operations. We just don't know. Some we do know that the animals were from infected barns and the probability of these being carried with them into the next barn was very high," said Dickson.

Though the virus isn't always a death sentence, it drastically affects productivity. And even once an animal appears healthy again, that doesn't mean the nightmare is over.

"If it got into a nursery and they became infected, there are some losses, and the animals don't do terribly well, but they recover and some of them carry it through into the finishing barn. Eventually the animals stop shedding – they become immune to it. The problem we have now is you don't know for certain that they're not going to shed again," Dickson said.

PED is not a federally-reportable disease, which means there is no available compensation for affected producers, and no ordered quarantines or culls. It also means affected operations have to bear the full brunt of the costs associated not just with losses from the illness, but also the price of the subsequent clean-up.

The Government of Manitoba website listed 73 confirmed infections as of the end of September, but most were concentrated in the southeast region of the province – and everyone in the province's value chain is working hard to keep it from spreading.

"We have set up a system by where these finished pigs get moved to processing plants on special days or at the end of the day so that they can be handled separately and we can keep losses minimized," Dickson said.

Dedicated runs for higher-risk animals help reduce the risk, but without having the transportation sector on-board, it would all be for naught.

"The transport companies have set aside trailers for moving these animals. The intent is to try and minimize the potential for cross contamination of other animals. Those trailers that are potentially infected get special treatment and they go back to picking up pigs from operations where there's potential for disease," he explained.

The other opportunity for intervention is at assembly yards – by ensuring that high-risk animals skip the yard entirely. But that too comes at a cost.

"The assembly yards have worked out ways of getting a load put together and picking them up from the farm rather than

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bringing them to a yard. It's not as efficient, and the guys get less money because there are big price differences for different weights of sows," Dickson explained.

Not every operation in southeast Manitoba was infected, but many were.

"The other thing we have learned – and we probably knew it, but just didn't realize the consequences – these are very efficient operations in terms of labour use. So you get moving from one barn to the next barn, as well as the potential for them to bring the disease with them," Dickson said.

With so many barns and highly trained staff moving between them, it wasn't a surprise that the virus spread. However, how it spread is another question.

"There's a significant number of barns that for some reason or another, don't get infected. The perplexing thing is why some of these sow barns are getting infected. In one case, there was very good biosecurity and for some reason it broke. It's not close to anybody, there's no wind, staff has been very good ¬– all the basic steps were in place. An audit was even done afterwards to figure out how it got in," Dickson said.

"People say it's spread by wind, but if that's true, then why didn't two barns in the middle get infected? It could have also been birds or animals that brought it as well. And we have to be careful – just because you find the virus in the environment doesn't mean it's gotten all the way through to the yard. It has to get into the barn, into the ventilation system, and then the pigs have got to breathe it in to get it into their system, and then they have to get enough of a dose that they become infected."

Dickson says operations take biosecurity very seriously, but mistakes happen and sometimes, having an outside set of eyes helps identify weak spots, such as where staff are taking off their gloves. And even producers with a tremendous commitment to biosecure procedures will still face risks that cannot be mitigated.

"Some of these multiple barn sites, it's simply not physically possible for the staff to shower-in to each individual barn every time they have to go and perform some management function or some animal husbandry function," he said.

Though the new cases didn't start popping up until May of this year, the bad news is that the virus tends to do well in winter. PED thrives in moist conditions – and anyone who had spent time in Manitoba in the winter knows how much snow can accumulate.

"This disease, unfortunately, is not affected by cold. You get wet clothes, wet feet, and what we want is actually bone-dry conditions," Dickson said. "We're hoping we're going to get on top of this, but we say that every week and all of a sudden we get a fresh case." ■

Industry News

Le Porc Show returns for an encore

By Sheri Monk

If there's one industry event not to be missed in eastern Canada before the end of the year, Le Porc Show is it. Retuning for its fourth annual event, the convention will be held November 27 and 28 in historic downtown Quebec City.

"We try to take what is good and different, and to use that as a new way to produce an event. Agriculture can be very conservative, but we do something new and I think it's working because we've received a lot of good comments about it, especially from Ontario and people from western Canada. They are not used to participating in this kind of event," said Sébastien Lacroix, a member of Le Porc Show's steering committee.

The show is designed to offer something to everyone in the pork value chain.

"I have to not focus too much on the retailers, I have to not focus too much on the producers. I have to find what will gather all the people, even if they have different interests. It is a good

CONTINUED ON PAGE 34

Temple Grandin at Le Porc Show 2016.

challenge and I think we have done it well," said Lacroix.

The event is growing annually, and its audience is coming increasingly geographically diverse.

"We had 1,022 people last year. Ten per cent of the people were from outside of Quebec, so it is really nice to see the event evolve," he said.

The opening night will begin for some at 4 p.m., featuring a pre-conference with Yu Ping Ing, president and founder of Tianzow Breeding, which owns more than 60,000 sows across China. (Yu Ping Ing returns the next day as one of the event's keynote speakers.)

"We invite exhibitors to bring their clients to participate in that, and after it is the opening evening for the cocktail and exhibition room. You will have a chance to taste hors d'oeuvres and meet the 65 exhibitors," Lacroix said.

Following the opening, many of the speakers, exhibitors and attendees travel the short distance to old Quebec City, making their way to world-famous restaurants featuring authentic Québécois dishes.

Lacroix says that despite the temptation of good wine and better company, people will head back to the hotel before long as the next morning, coffee, registration and mingling begins at 7:30 a.m., until the first speaker takes the podium at 9.

"One of the biggest issues in Canada, Mexico and the U.S. is NAFTA, and so we have invited Mr. Raymond Bachand to speak. The rest of Canada may not know him, but he was minister of economic development, innovation and export trade under Premier Jean Charest," Lacroix said.

Today, Bachand serves in the capacity of strategic advisor for the law firm Norton Rose Fulbright, and was recently named chief negotiator for the Quebec government ahead of the formal NAFTA modernization renegotiations.

"The approach will be what we want for the first version of the new NAFTA, what we can win and what we can lose during the negotiations. It will be a good summary of where we were, where we are now, and where we're going," Lacroix said.

The next speaker is Yu Ping Ing, who will finally provide a bird's eye view of the massive and growing Chinese pork market in his presentation, entitled 'China – a journey through the world's biggest hog herd'.

Former Retail Council of Canada chair, Alain Dumas, is next up with a presentation about the e-commerce and the retail food sector.

Le Porc Show might even break a record – they are vying for the title of largest spaghetti pork dinner ever served in Quebec. Breaking bread with the crowd will be the Food Network's Ricardo, a renowned culinary chef and the official spokesperson for La Tablée des Chefs, an organization that helps feed undernourished families, and educates youth about nutrition and food preparation. There will be $10 donated for every person in attendance at the delicious meal for a good cause.

The afternoon features three different workshops – marketing, animal welfare, and health and livestock management. The afternoon wraps up with industry awards, and a special hour with Sylvain Boudreau, a dynamic, national personality dedicated to helping people become successful by "showing themselves off". A cocktail hour with the exhibitors follows, before the evening festivities begin.

Once again, the night-time celebrations will feature wine and beer tastings, paired with exciting, pork-themed dishes. Attendees receive 15 tickets to be spent on fine food and drink, but more can be purchased. Once again, students from a Quebec City culinary school will be competing for the chance at a scholarship, and the lucky taste buds in attendance will decide the outcome.

"I think we have a great program and I think Quebec City is a town people still want to visit – it is like a little Europe. If people have the time to come here at the end of November, they will find though it can be cold and snowy, it is very beautiful."

Information on the event, including how to register, can be found at leporcshow.com. ■

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Social Licence

Alberta SPCA celebrates 50 years of legislated protection for Alberta's animals

Submitted by the Alberta SPCA

The Animal Protection Act of Alberta turns 50 this year. Since it brought in the first version of the act in 1967, the provincial government has entrusted the Alberta SPCA with protecting Alberta's animals from situations of neglect or abuse.

"Over time, as Alberta's cities and towns have grown, we've received more and more calls about dogs and other companion animals," says Terra Johnston, executive director of the Alberta SPCA, "but there are a lot of farms in Alberta. More than half our investigations still involve horses, cattle and other agricultural animals. Many of these animals are part of commercial operations, but others are on hobby farms or are 'companion livestock' on rural properties."

In 2016, the Alberta SPCA dispatched 2,201 investigations. Horses are typically the most common livestock species seen, being involved in 29 per cent of cases last year. Cattle were investigated in 10 per cent of cases and other farm animals in an additional 13 percent. The remaining cases involved dogs, cats or other companion animals.

A relatively small number of Alberta SPCA investigations involve hogs and hog production. In some of those cases, the Alberta SPCA has worked with Alberta Pork to secure expertise and resources to help manage the animals involved. Alberta Pork has its own Code of Practice and Animal Care Assessment to ensure its members' hogs are protected from neglect and abuse.

The Alberta SPCA is a charitable organization, not a government agency, but it is authorized by Alberta's Solicitor General and Minister of Public Security to employ peace officers to enforce the Animal Protection Act. The current contingent of 11 peace officers work out of the head office in Edmonton or regional offices in Okotoks, Innisfail and Grande Prairie.

Alberta SPCA peace officers investigate every report they receive where there are reasonable grounds to believe an animal is in distress. Most of those investigations start with a call from a concerned member of the public.

"We can't pick and choose our cases," says peace officer Ken Dean, director of animal protection services at the Alberta SPCA. "We have a duty to respond to every call that meets the legal standard, so our peace officers have to be ready to deal with any type of animal."

Successful applicants for animal protection officer openings typically have many years of prior experience in both law enforcement and animal handling.

"Most of us, myself included, grew up on a farm or worked with farm animals as adults," says Dean. "Law enforcement experience is valuable, but I'm usually looking to see that combined with animal experience, especially large animals. One of our recent hires is an experienced horse trainer who was hauling livestock and cowboying for more than 20 years before he started as an animal protection officer."

Before they receive their appointments, all Alberta SPCA peace officers must graduate from the Alberta Justice and Solicitor General Training Academy. During their employment at the Alberta SPCA they receive ongoing training in the care and handling of all species of owned animals.

"No two investigations are alike," says Dean, "and our animal protection officers use their extensive experience and knowledge of animal handling and care to determine what actions are appropriate for the situation."

The weather, the specific condition and location of the animals and the owner's willingness and ability to make improvements all affect how investigations are handled. Even the timeframe for investigations varies from a few days to a few months, or even a few years.

Alberta Agriculture and Forestry is the ministry responsible for the Animal Protection Act, and the act was first crafted with rural animals in mind. It is written to facilitate an enforcement model built on compliance principles – Alberta SPCA peace officers have a wide array of enforcement tools, but most of those tools only come into effect after an owner refuses to correct an identified problem.

"People are sometimes reluctant to call us because they don't want to get a neighbour in trouble," says Johnston. "But the primary objective of our investigations is to ensure proper animal care. It is not about punishing people."

In about 40 per cent of cases, the investigating peace officer will find that the caller's concerns were unfounded. Other times, the investigator may confirm the reported concern, but also find that the animal is already receiving corrective care. The peace officer will tell the animal's owner the reason for the visit, but no other action will be taken. The investigation ends there and no one else typically knows anything about it.

In most cases where there is a reason for concern, the situation is relatively minor. Cattle might need a little extra feed over winter if the fall grazing was poor, or the bedding in a paddock might need to be replaced after a wet spring. The Alberta SPCA peace officer makes sure the animal owner or caretaker understands the problem and has a plan to correct it. The peace officer will return in a few days or a few weeks (depending on the issue) to see that the necessary changes were made and then conclude the investigation.

If the peace officer gives the owner a written warning, it will include a stipulation of what needs to be done and how soon. The peace officer will check back at the specified time to ensure the owner has complied with the instructions. Some situations may require multiple follow-ups with the owner. The peace officer will only conclude the investigation when conditions have improved and the officer is confident the animals are being cared for appropriately.

In the most serious cases, the peace officer may determine that animals must be seen by a veterinarian immediately. The owner is usually given the opportunity to call a veterinarian of his or her choice, but if the owner can't be located or refuses to comply, the Alberta SPCA peace officer will call a veterinarian directly.

Serious cases can also require animals to be taken into protective custody. The Alberta SPCA can remove animals from a property if attempts to improve the condition of the animals fail, if the peace officer has reason to believe the owner will not follow-through on urgently required care, or if the animals are in immediate jeopardy. The peace officer will give the owner an official notice of seizure that identifies the animals taken and the procedure for reclaiming them. While the animals are in protective custody, the peace officer will ensure whatever care and veterinary treatment is necessary to relieve distress in the animals.

Alberta SPCA peace officers have the authority to lay charges under the Animal Protection Act, but this step is only taken in approximately one per cent of cases.

"Even when our officers take animals into protective custody, it doesn't necessarily mean they will be laying charges against the owners," says Dean. "Their number one priority remains focused on the welfare of the animals. Specifically, are they free from distress and being cared for appropriately? The consideration of charges happens later, only after the animals' issues have been addressed."

"If the media finds out about an active investigation, it's because someone else called them," says Roland Lines, communications manager at the Alberta SPCA. "We take the confidentiality of our investigations very seriously. We don't release investigative details to the media, we don't reveal the identity of a complainant to the animal owner, and we don't discuss the owner's personal information with the complainant."

The Alberta SPCA relies on calls from the public to alert it to situations where animals may be in distress. Call 1-800-455-9003 to report suspected animal neglect or abuse outside Edmonton and Calgary. ■

Ontario's Pig Mobile is on the job of public education

One producer's experience on the frontlines of agriculture activism

Photos and story by Drew De Bruyn

The Pig Mobile is a goose neck trailer that has plexiglass windows on one side to provide viewing opportunities of the two farrowing crates and a nursery pig pen housed within it. Sponsored by Ontario Pork, producers Ron and Sharon Douglas take care of the pig mobile, and it is featured at different events throughout the year across the province.

It is a great way to explain to the public how pork production works, without the biosecurity risks that can accompany on-farm tours.

Recently the pig mobile was at the Canadian National Exhibition (CNE or the Ex) held in Toronto from August 18 until September 4. The largest annual fair in Canada, CNE attracts 1.5 million people to the event. A few volunteers from the industry sit with the pig mobile to interact with the public and answer any questions. I spent a Saturday with the pig mobile at the CNE.

Ag activist Drew De Bruyn takes a selfie with the Pig Mobile and the information-hungry public.

The Pig Mobile is sponsored by Ontario Park and travels to events throughout the province.

There was a steady crowd in front of the windows to the pig mobile all day and there were lots of good questions. People were generally interested in the display. I liked to start things off by asking the kids if they could count how many piglets the sow had. It was fun watching a family try their best at counting, and each one would come up with a different number. Then I would explain that the piglets were seven days old and had already doubled in size since they were born. People were surprised about that. They were even more awe struck when I said that the gilt was a first-time mother and was only one year old. People could not wrap their head around how fast a pig grows! This is something that pork producers just take for granted.

The most common questions were about the farrowing crate. Once I explained that it was to help protect the baby piglets from being crushed by the mother sow, the majority of the people said, "ahh that makes sense" and then they were content.

Some people asked where my farm was. I explained that it was two hours away near Woodstock (between Toronto and London). I would in-turn ask where they were from and how they got to the CNE. I met some people from my hometown and even met a neighbour who lives just one road over! People would then ask about our farm and they were surprised to learn the size of it. (Just an average farrow-to-finish in Ontario). They were also surprised at how we have only a handful of people working on the farm, compared to the number of pigs.

Overall my day at the CNE was time well spent. It was a rewarding to be there and interact with the public. Every bit of educating the public on agriculture adds up.

Editor's note: *Way to go, Drew! Thanks for contacting us and sharing your story. We'd love to hear from other agriculture activists who are finding creative ways to share our story with the public. Email sherimonk@gmail.com and tell us how you're making a difference!* ■

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Analyzing and optimizing slaughter results

Submitted by Jan Geurts, Nutrition Partners Inc.

Introduction

Canadian hog producers put a great deal of effort into raising hogs as efficiently as possible. Having highly prolific sows with superior performance, raising quality piglets, and finishing healthy quality hogs with high ADG and low FCR are essential to achieving this goal. These performance measures can be monitored well through management programs.

When pigs are shipped to the slaughter plant, producers want to know how their pigs have performed.

A high index is the main characteristic producers look at to see if they are doing an excellent job. But there are always questions such as:

- What is the optimal weight for shipping?
- Does it pay to put on the extra weight?
- Does the slaughter grid I ship my pigs on optimize my profitability?

Slaughter grids and lean yield percentage calculation

Slaughter plants each have their own specific slaughter grid, and grids can vary substantially from plant to plant.

Figure 1. OlyWest 102 kg Pay Plus Grid

OlyWest 102KG Pay Plus Grid — Olymel

	0	77	82	87	92	97	102	107	112	117	122
Weight #	1	2	3	4	5	6	7	8	9	10	11
Lean Yield %	0 - 76.9 kg	77-81.9 kg	82-86.9 kg	87-91.9 kg	92-96.9 kg	97-101.9 kg	102-106.9 kg	107-111.9 kg	112-116.9 kg	117-121.9 kg	> 122 kg
64.3 - 100.0	10	50	75	90	95	100	100	100	100	100	50
63.0 - 64.29	10	50	75	95	103	108	108	108	105	100	50
61.8 - 62.99	10	50	80	105	109	113	113	113	109	100	50
60.7 - 61.79	10	50	90	109	112	116	116	116	112	105	75
59.6 - 60.69	10	50	90	109	112	116	116	116	112	105	75
58.6 - 59.59	10	50	80	105	109	114	114	114	109	100	50
57.7 - 58.59	10	50	75	100	103	109	109	109	105	90	50
56.9 - 57.69	10	50	60	85	95	103	103	103	95	80	50
56.1 - 56.89	10	50	60	70	90	90	90	90	80	70	50
0.00 - 56.09	10	50	60	60	70	70	70	70	60	60	50

Figure 2. Effect of backfat and lean (mm) on lean yield % and indexing in the Olywest 102kg Pay Plus Grid

Lean Yield % — OlyWest 102KG Pay Plus Grid

Backfat mm \ Lean mm	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	Max Index
9.0	65.2	65.3	65.3	65.4	65.4	65.5	65.5	65.6	65.6	65.7	65.7	65.8	65.8	65.9	65.9	66.0	66.0	
10.0	64.6	64.7	64.7	64.8	64.8	64.9	64.9	65.0	65.0	65.1	65.1	65.2	65.2	65.3	65.3	65.4	65.4	
11.0	64.0	64.1	64.1	64.2	64.2	64.3	64.3	64.4	64.5	64.5	64.6	64.6	64.6	64.7	64.7	64.8	64.8	100
12.0	63.5	63.5	63.6	63.6	63.7	63.7	63.8	63.8	63.9	63.9	64.0	64.0	64.1	64.1	64.2	64.3	64.3	
13.0	62.9	63.0	63.0	63.1	63.1	63.2	63.2	63.3	63.3	63.4	63.4	63.5	63.5	63.6	63.6	63.7	63.7	
14.0	62.4	62.4	62.5	62.5	62.6	62.7	62.7	62.8	62.8	62.9	62.9	63.0	63.0	63.1	63.1	63.2	63.2	108
15.0	61.9	61.9	62.0	62.0	62.1	62.1	62.2	62.2	62.3	62.4	62.4	62.5	62.5	62.6	62.6	62.7	62.7	
16.0	61.4	61.4	61.5	61.5	61.6	61.6	61.7	61.7	61.8	61.9	61.9	62.0	62.0	62.1	62.1	62.2	62.2	113
17.0	60.9	60.9	61.0	61.0	61.1	61.2	61.2	61.3	61.3	61.4	61.4	61.5	61.5	61.6	61.6	61.7	61.7	
18.0	60.4	60.5	60.5	60.6	60.6	60.7	60.7	60.8	60.8	60.9	60.9	61.0	61.0	61.1	61.1	61.2	61.2	
19.0	59.9	60.0	60.1	60.1	60.2	60.2	60.3	60.3	60.4	60.5	60.5	60.6	60.6	60.7	60.7	60.8	60.8	
20.0	59.5	59.6	59.6	59.7	59.7	59.8	59.8	59.9	60.0	60.0	60.1	60.1	60.2	60.2	60.3	60.3	60.4	116
21.0	59.1	59.1	59.2	59.3	59.3	59.4	59.4	59.5	59.5	59.6	59.7	59.7	59.8	59.8	59.9	59.9	60.0	
22.0	58.7	58.7	58.8	58.9	58.9	59.0	59.0	59.1	59.1	59.2	59.3	59.3	59.4	59.4	59.5	59.5	59.6	
23.0	58.3	58.3	58.4	58.5	58.5	58.6	58.6	58.7	58.8	58.8	58.9	58.9	59.0	59.0	59.1	59.2	59.2	
24.0	57.9	58.0	58.0	58.1	58.2	58.2	58.3	58.3	58.4	58.4	58.5	58.6	58.6	58.7	58.7	58.8	58.8	114
25.0	57.6	57.6	57.7	57.7	57.8	57.9	57.9	58.0	58.0	58.1	58.2	58.2	58.3	58.3	58.4	58.4	58.5	
26.0	57.2	57.3	57.3	57.4	57.5	57.5	57.6	57.6	57.7	57.8	57.8	57.9	57.9	58.0	58.0	58.1	58.2	109
27.0	56.9	56.9	57.0	57.1	57.1	57.2	57.3	57.3	57.4	57.4	57.5	57.6	57.6	57.7	57.7	57.8	57.8	
28.0	56.6	56.6	56.7	56.8	56.8	56.9	56.9	57.0	57.1	57.1	57.2	57.3	57.3	57.4	57.4	57.5	57.5	
29.0	56.3	56.3	56.4	56.5	56.5	56.6	56.7	56.7	56.8	56.8	56.9	57.0	57.0	57.1	57.1	57.2	57.3	103
30.0	56.0	56.1	56.1	56.2	56.3	56.3	56.4	56.4	56.5	56.6	56.6	56.7	56.8	56.8	56.9	56.9	57.0	
31.0	55.7	55.8	55.9	55.9	56.0	56.1	56.1	56.2	56.2	56.3	56.4	56.4	56.5	56.6	56.6	56.7	56.7	
32.0	55.5	55.6	55.6	55.7	55.7	55.8	55.9	55.9	56.0	56.1	56.1	56.2	56.3	56.3	56.4	56.4	56.5	90

The OlyWest 102kg Pay Plus Grid (Figure 1) is an example of such a slaughter grid.

The index of an individual pig is determined by its;

- lean yield percentage, and;
- dressed weight.

The highest index (116) is achieved in the OlyWest 102 kg Pay Plus Grid by pigs that have;

- a lean yield percentage between 59.6% and 61.79%, and;
- a dressed weight between 97.0 and 111.9 kg.

Pigs with a higher or lower lean yield percentage have a lower index, and lighter and heavier pigs also have lower indexes.

Lean yield percentage

The pig's weight can be controlled through nutrition and management, but how is the lean yield percentage determined?

CONTINUED ON PAGE 42

Figure 3. Signature Magnum Grid @101kg

Signature Magnum Grid @101kg — Maple Leaf

	0	69	79	88.5	93.5	98.5	103.5	108.5	113.5	118.5	123.5
Weight #	1	2	3	4	5	6	7	8	9	10	11
Lean Yield %	0 - 68.99 kg	69-78.99 kg	79-88.49 kg	88.5-93.49 kg	93.5-98.49 kg	98.5-103.49 kg	103.5-108.49 kg	108.5-113.5 kg	113.5-118.49 kg	118.5-123.49 kg	123.5+ kg
64.3 - 100	25	65	102	106	108	108	108	108	102	95	80
61.8 - 64.2	25	65	104	108	110	110	110	110	104	100	80
59.6 - 61.7	25	65	102	106	110	110	110	108	100	100	80
57.7 - 59.5	25	65	98	100	106	110	108	106	98	95	80
56.1 - 57.6	25	65	92	95	104	106	104	100	92	90	80
54.7 - 56.0	25	65	90	94	95	95	95	94	90	85	70
0 - 54.6	25	65	65	65	65	65	65	65	65	65	65

Lean Yield % — **Signature Magnum Grid @101kg**

Backfat mm	Lean mm 84.0	85.0	86.0	87.0	88.0	89.0	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0	Max Index
9.0	85.7	85.9	86.1	86.4	86.6	86.8	86.9	86.9	86.8	86.7	86.7	86.6	86.4	86.3	86.1	85.9	85.6	
10.0	84.6	84.7	84.7	84.8	84.8	84.8	84.8	84.8	84.7	84.6	84.5	84.3	84.2	84.0	83.8	83.5	83.2	
11.0	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.4	83.3	83.2	83.1	82.9	82.7	82.5	82.3	82.0	81.7	108
12.0	82.5	82.5	82.5	82.5	82.5	82.5	82.4	82.3	82.2	82.1	81.9	81.7	81.5	81.3	81.0	80.7	80.4	
13.0	81.5	81.5	81.5	81.5	81.5	81.4	81.3	81.2	81.1	80.9	80.7	80.5	80.3	80.0	79.7	79.4	79.1	
14.0	80.5	80.5	80.5	80.5	80.4	80.4	80.3	80.2	80.0	79.8	79.6	79.4	79.1	78.8	78.5	78.2	77.8	
15.0	79.5	79.5	79.5	79.4	79.4	79.3	79.2	79.1	78.9	78.7	78.5	78.2	77.9	77.6	77.3	76.9	76.5	113
16.0	78.5	78.5	78.5	78.4	78.4	78.3	78.2	78.0	77.8	77.6	77.4	77.1	76.8	76.5	76.1	75.7	75.3	
17.0	77.6	77.6	77.5	77.5	77.4	77.3	77.2	77.0	76.8	76.6	76.3	76.0	75.7	75.4	75.0	74.6	74.1	
18.0	76.6	76.6	76.6	76.5	76.4	76.3	76.2	76.0	75.8	75.5	75.3	75.0	74.6	74.3	73.9	73.4	72.9	
19.0	75.7	75.7	75.6	75.5	75.4	75.3	75.1	74.9	74.7	74.5	74.2	73.9	73.6	73.2	72.8	72.3	71.8	
20.0	74.8	74.7	74.7	74.6	74.5	74.3	74.1	73.9	73.7	73.4	73.1	72.8	72.5	72.1	71.7	71.2	70.7	
21.0	73.8	73.8	73.7	73.6	73.5	73.3	73.1	72.9	72.6	72.4	72.1	71.8	71.4	71.0	70.6	70.1	69.6	
22.0	72.9	72.8	72.8	72.7	72.5	72.3	72.1	71.9	71.6	71.3	71.0	70.7	70.3	69.9	69.5	69.0	68.5	110
23.0	71.9	71.9	71.8	71.7	71.5	71.3	71.1	70.8	70.6	70.3	70.0	69.6	69.2	68.8	68.4	67.9	67.4	
24.0	71.0	70.9	70.8	70.7	70.5	70.3	70.1	69.8	69.5	69.2	68.9	68.5	68.1	67.7	67.3	66.8	66.3	
25.0	70.0	70.0	69.9	69.7	69.5	69.3	69.0	68.8	68.5	68.2	67.8	67.4	67.0	66.6	66.2	65.7	65.2	
26.0	69.1	69.0	68.9	68.7	68.5	68.3	68.0	67.7	67.4	67.1	66.8	66.4	66.0	65.6	65.1	64.6	64.1	
27.0	68.1	68.0	67.9	67.7	67.5	67.2	67.0	66.7	66.4	66.1	65.7	65.3	64.9	64.5	64.0	63.5	63.0	
28.0	67.1	67.0	66.9	66.7	66.5	66.2	65.9	65.6	65.3	65.0	64.6	64.2	63.8	63.4	62.9	62.4	61.9	
29.0	66.2	66.1	65.9	65.7	65.5	65.2	64.9	64.6	64.3	63.9	63.5	63.1	62.7	62.3	61.8	61.3	60.8	
30.0	65.2	65.1	65.0	64.8	64.5	64.2	63.9	63.6	63.2	62.9	62.5	62.1	61.7	61.2	60.7	60.2	59.7	109
31.0	64.3	64.2	64.0	63.8	63.5	63.2	62.9	62.6	62.2	61.8	61.4	61.0	60.6	60.1	59.6	59.1	58.6	
32.0	63.3	63.2	63.1	62.8	62.5	62.2	61.9	61.5	61.2	60.8	60.4	60.0	59.5	59.0	58.5	58.0	57.5	

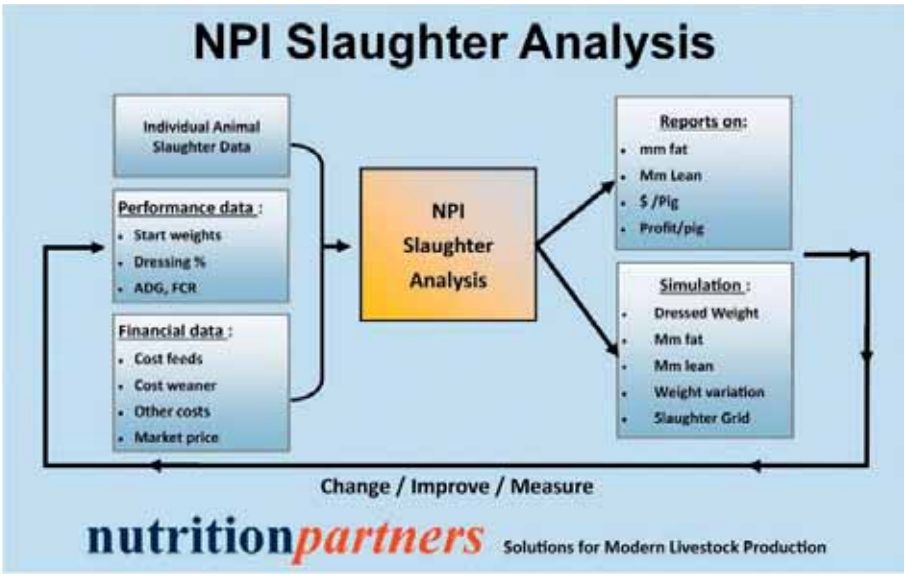
Lean yield percentage is calculated from the carcass backfat (mm fat) and lean (mm lean) depth measurements using the following formula:

68.1863 - (0.7833*mm fat) + (0.0689*mm lean)
+ (0.0080*mm fat*mm fat) – (0.0002*mm lean*mm lean)
+ 0.0006* mm fat * mm lean

Looking at the weighing factors, you can see that mm backfat has the largest (>90%) impact on lean yield percentage. Figure 2 also demonstrates clearly that backfat (mm) has the greatest impact on index. As long as the pig's mm fat is between 17.0 and 19.0mm, you will have an index of 116 on the OlyWest 102 Pay Plus Grid, independent of whether your mm lean is 54mm or 70mm.

It is important to know how your grid works, since each grid is different. As an example, for comparison, the optimal mm fat for the highest index is between 12 and 15mm in the Signature Magnum Grid @ 101kg from Maple Leaf (Figure 3).

Figure 4. NPI Slaughter Analysis



Therefore, you can adjust your nutritional strategies to optimize your pig's slaughter characteristics (weight and backfat) to achieve the optimum index on the grid you are using.

NPI Slaughter Analysis

At Nutrition Partners, we developed the NPI Slaughter Analysis Program to help our customers analyze their slaughter data and determine the optimal strategies for shipping their hogs (Figure 4).

To determine the whole picture, we consider;

- Performance data – Start weight, dressing percentage, ADG and FCR;
- Financial data – Cost of feed, fixed costs, variable costs, mortality costs and market price

After inputting the appropriate data, the program will process the data and generate reports, which include backfat (mm), lean (mm), return/shipped pig, opportunity/shipped pig, net profit/shipped pig, and net profit/pig place/year (*).

CONTINUED ON PAGE 44

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(*) When the farm is tight on space, "net profit/pig place/year" is the number to look at. Although a heavier dressed weight can generate a higher profit per shipped pig, fewer batches per pig place are put through in a year which can reduce your overall profitability per pig place per year.

If you are not limited for space, the aim is for the highest "net profit per shipped pig".

NPI Slaughter Analysis Summary Report

The NPI Slaughter Analysis Program generates a summary report (Figure 5), which gives a quick overview of information on a shipment of pigs, and calculates:

- Average, minimum, and maximum dressed weight, mm backfat, mm lean, lean yield percentage, index and $ amount per shipped pig.
- Standard deviation for mm backfat, mm lean, lean yield percentage, index and dollar amount per shipped pig. In this example shipment of pigs, 2 x the standard deviation of the pigs dressed weight means that 95% of the pigs are within a dressed weight range of 99.45 +/- 8.71 kg, or between 90.74 and 108.16 kg. This shows how well the pigs have been weighed; we typically see variations between 6 to 12 kg, and will demonstrate the financial impact of this variation later in the article.
- Number of pigs, per cent of pigs, dressed weight, mm backfat, mm lean, lean yield percentage, index, dollar return per pig, and the profit per pig for the eleven weight and ten lean yield categories.

Figure 5. Summary Report – NPI Slaughter Analysis

OlyWest 102KG Pay Plus Grid — NPI Slaughter Analysis

Summary

Producer name :	Example
Report from - to :	
Base Price :	$ 2.000
Grid #	8

Simulation

Kg dressed	0.00	
Mm fat	0.00	
Mm lean	0.00	
Weight variation	0.00	%

Farm data

Start weight (kg) :	25.00	
Dressing % :	80.0	
ADG (g/day) :	940	
FCR -Avg. -End	2.850	3.500
Cost/ton feed-Avg-End	$280.00	$ 230.00
Cost/ weaner	$ 50.00	
Fixed Cost/Pigplace/year	$ 33.00	
Variable Cost/shipped pig	$ 13.21	
Average Feedcost	$ 79.25	

Occupation %	90.0
Batches/year	3.11
Return/pig	$ 220.63
Cost weaner	$ 50.00
Cost Feed	$ 79.25
Cost Mortality	$ 3.00
Other cost	$ 23.82
Net Profit/shipped pig	$ 64.55
Net Profit/pig place/yr	$ 200.70

Shipping data	Settl. weight	mm fat	mm lean	Yield %	Index	Total Amount
Average	99.45	19.37	60.60	60.3	110.08	$ 220.63
Minimum	78.4	8.5	26.5	54.4	50.0	$ 75.60
Maximum	130.2	37.0	79.0	66.2	116.0	$ 257.86
2x Stand. Deviation	8.71	8.74	14.32	3.94	17.28	$ 44.39

= 95.4% of pigs +/- avg

Weight category

	Dressed Weight (kg)	# pigs	% pigs	Kg	Mm Fat	Mm Lean	Yield %	Index	Return/pig	Profit/pig
1	0 - 76.9								$ -	
2	77-81.9	3	0.1	80.0	15.3	57.0	61.9	50.0	$ 80	-$57
3	82-86.9	10	0.4	85.0	16.8	59.5	61.3	83.5	$ 142	$1
4	87-91.9	60	2.4	90.2	19.0	58.7	60.4	100.2	$ 181	$34
5	92-96.9	605	24.0	95.2	18.3	59.4	60.7	107.5	$ 205	$53
6	97-101.9	1205	47.9	99.4	19.3	60.6	60.3	111.8	$ 224	$68
7	102-106.9	506	20.1	103.7	20.2	61.7	60.0	111.6	$ 234	$74
8	107-111.9	105	4.2	108.8	22.7	62.5	59.0	108.9	$ 239	$74
9	112-116.9	17	0.7	113.2	22.5	64.1	59.3	101.0	$ 229	$59
10	117-121.9	4	0.2	119.2	20.9	57.4	59.4	97.5	$ 232	$56
11	> 122	1	0.0	130.2	24.5	65.5	58.4	50.0	$ 130	-$57
	Total	2516	100.0	99.5	19.4	60.6	60.3	110.0	$ 220.63	$65
	Change per kg	92-96.9	107-111.9		0.32	0.22				

Yield Category

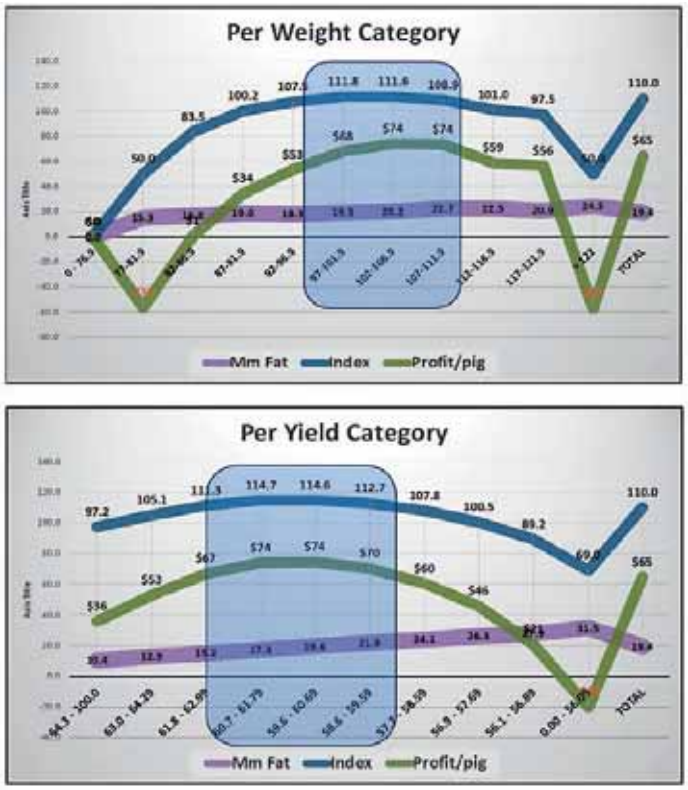
	Yield %	# pigs	% pigs	Kg	Mm Fat	Mm Lean	Yield %	Index	Return/pig	Profit/pig
1	64.3 - 100.0	47	1.9	97.2	10.4	66.2	65.0	97.2	$ 190	$36
2	63.0 - 64.29	170	6.8	97.6	12.9	64.0	63.5	105.1	$ 207	$53
3	61.8 - 62.99	382	15.2	98.5	15.2	63.0	62.3	111.3	$ 222	$67
4	60.7 - 61.79	512	20.3	99.2	17.3	61.8	61.2	114.7	$ 230	$74
5	59.6 - 60.69	547	21.7	99.6	19.6	61.3	60.1	114.6	$ 231	$74
6	58.6 - 59.59	377	15.0	100.1	21.8	59.4	59.1	112.7	$ 227	$70
7	57.7 - 58.59	245	9.7	100.6	24.1	57.6	58.1	107.8	$ 218	$60
8	56.9 - 57.69	122	4.8	101.0	26.3	56.4	57.3	100.5	$ 203	$46
9	56.1 - 56.89	73	2.9	100.6	27.9	52.4	56.5	89.2	$ 178	$21
10	0.00 - 56.09	41	1.6	100.8	31.5	50.4	55.4	69.0	$ 137	-$20
	Total	2516	100.0	99.5	19.4	60.6	60.3	110.0	$ 220.63	$65

The graphs in Figure 6 give the average index, mm backfat, and profit per shipped pig for each dressed weight and lean yield category. These graphs make it easy to determine the optimal weight range for shipping your pigs. In this case, to optimize your profits when selling on the Olywest 102 kg Pay Plus Grid, it would be prudent to ship most of the pigs in the 97.0 to 111.9 kg dressed weight range, and as few as possible over 122 kg or below 92 kg dressed weight.

It also shows that the highest index "the core" doesn't always give you highest profit per pig. Sometimes a higher weight with a little lower index can result in a higher net profit.

The NPI Slaughter Analysis Program provides up to 8 scenarios in which grid, dressed weight, mm backfat, mm lean, weight variation, ADG, FCR and average cost per ton of feed can be varied to see the financial impact on the Net Profit/shipped pig and Net Profit/Pig Place/Year.

Figure 6. Average index, mm backfat, profit per shipped pig per weight and yield category.



Simulation 1 - Raising the dressed weight by 3 kg, from 99.45 to 102.45 kg:

- will increase net profit by $4.56 per shipped pig and $6.37/pig place/year.
- will increase the profit per pig place relatively less than expected because fewer batches (3.00 vs 3.11 batches/year) will be run through the barn annually.

Simulation 2 - Raising the dressed weight by 6 kg, from 99.45 to 105.45 kg:

- will increase net profit by $6.42 per shipped pig and $4.46 /pig place/year.
- illustrates that marketing pigs at even heavier weights will yield a higher profit/pig, but as even fewer batches are run through the barn per year (2.89 vs 3.11), your profit per pig place will be $1.91 less than in Simulation 1.

Simulation 3 - Tightening the dressed weight variation by 30%:

- will increase the average index from 110.03 to 110.69
- will increase net profit by $1.28 /shipped pig and $ 3.98 /pig place /year.

Simulation 4 - Increasing the dressed weight variation by 30%:

CONTINUED ON PAGE 46

- will reduce the index from 110.03 to 109.13 resulting in a decrease in net profits by $1.70 per shipped pig and $5.28 / pig place / year.
- Illustrates that there can be a net profit difference of almost $3 / shipped pig between good weighing and poor weighing.

Simulation 5, 6, 7 - Changing mm backfat, increasing dressed weight and decreasing weight variation has varying effects on net profit.

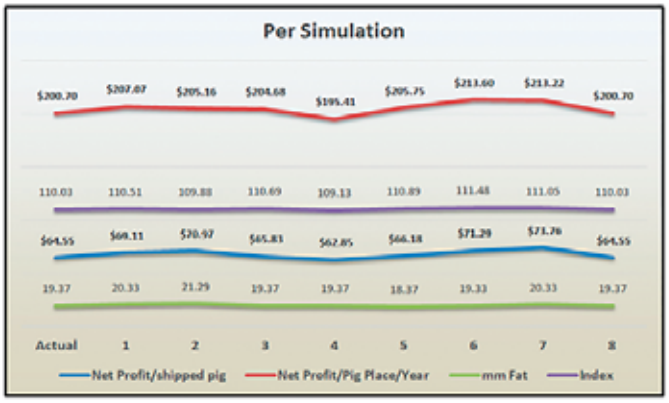
- In Simulation 6 - increasing the dressed weight by 3 kg, lowering mm backfat by 0.04 mm, and tightening the weight variation by 30% increases net profit by $6.74 per shipped pig and $12.90 / pig place/year.
- In Simulation 7 - increasing the dressed weight by 6 kg, increasing mm backfat by 0.96 mm, and tightening the weight variation by 30% increases net profit by $9.21 per shipped pig and $12.52 / pig place/year.

Figure 7. NPI Slaughter Analysis Simulation Report

OlyWest 102KG Pay Plus Grid — **NPI Slaughter Analysis - SIMULATIONS**

Producer name : Example — Base Price $ 2.000 — Run Simulation

Simulation	Actual	1	2	3	4	5	6	7	8
Grid #	8	8	8	8	8	8	8	8	8
Kg dressed	0.00	3.00	6.00	0.00	0.00	0.00	3.00	6.00	0.00
Mm fat	0.00	0.96	1.92	0.00	0.00	-1.00	-0.04	0.96	0.00
Mm lean	0.00	0.66	1.32	0.00	0.00	0.00	0.66	1.32	0.00
Weight variation %	0.00	0.00	0.00	-30.00	30.00	-30.00	-30.00	-30.00	0.00
Average ADG (g/day)	940	940	940	940	940	940	940	940	940
Average FCR	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
Average Cost/ton feed	280.00	280.00	280.00	280.00	280.00	280.00	280.00	280.00	280.00
Carcass characteristics									
Settl.weight	99.45	102.45	105.45	99.45	99.45	99.45	102.45	105.45	99.45
mm fat	19.37	20.33	21.29	19.37	19.37	18.37	19.33	20.33	19.37
mm lean	60.60	61.26	61.92	60.60	60.60	60.60	61.26	61.92	60.60
Yield %	60.30	59.93	59.57	60.30	60.30	60.75	60.36	59.96	60.30
Index	110.03	110.51	109.88	110.69	109.13	110.89	111.48	111.05	110.03
Standard Deviation Weight	8.71	8.71	8.71	6.10	11.32	6.10	6.10	6.10	8.71
Financial									
Return/pig	$220.68	$228.61	$233.88	$221.91	$218.98	$222.25	$230.79	$ 236.67	$220.68
Cost weaner	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Cost Feed	$ 79.25	$ 82.27	$ 85.29	$ 79.25	$ 79.25	$ 79.25	$ 82.27	$ 85.29	$ 79.25
Cost Mortality	$ 3.00	$ 3.00	$ 3.00	$ 3.00	$ 3.00	$ 3.00	$ 3.00	$ 3.00	$ 3.00
Other cost	$ 23.82	$ 24.22	$ 24.63	$ 23.82	$ 23.82	$ 23.82	$ 24.22	$ 24.63	$ 23.82
Net Profit/shipped pig	$ 64.55	$ 69.11	$ 70.97	$ 65.83	$ 62.85	$ 66.18	$ 71.29	$ 73.76	$ 64.55
Net Profit/pig place/yr	$200.70	$207.07	$205.16	$204.68	$195.41	$205.75	$213.60	$ 213.22	$200.70
Break-Even Market Price	$ 1.411	$ 1.394	$ 1.392	$ 1.403	$ 1.423	$ 1.400	$ 1.382	$ 1.377	$ 1.411
Difference vs actual									
Per Shipped Pig		$ 4.56	$ 6.42	$ 1.28	-$ 1.70	$ 1.63	$ 6.74	$ 9.21	$ -
Per Pig Place/Year		$ 6.37	$ 4.46	$ 3.98	-$ 5.28	$ 5.06	$ 12.90	$ 12.52	$ -
Batches/Pig Place/year	3.11	3.00	2.89	3.11	3.11	3.11	3.00	2.89	3.11
Days/batch	117.4	121.8	126.3	117.4	117.4	117.4	121.8	126.3	117.4



In conclusion

- Know the grid your pigs are shipped on.
- What is the optimum dressed weight?
- What mm backfat should you be aiming for?
- Minimize the weight variation of the pigs shipped.
- Avoid shipping pigs that are too light or too heavy.
- The highest index doesn't always result in the highest net profit. Sometimes a higher weight with a slightly lower index can result in a higher net profit.
- Analyze your shipping data on a regular basis to see what the best shipping strategy is for you, and this will depend on market price, which grid works best for your farm, and how much finishing space is there on your farm.
- If finishing space is limited, optimize the net profit/pig place/year.
- If finishing space is no problem, optimize the net profit/shipped pig. ■

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Being too thin in late pregnancy is not a good thing for mammary development

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Introduction

Greater mammary development, hence increased number of cells that secrete milk, means more milk produced in lactation. But what can be done to optimize mammary development in late-pregnant gilts? It was recently shown that body condition of gilts affects their mammary development. A gilt that is too thin (12-15 mm backfat thickness at the P2 site of the last rib) on day 110 of gestation has less milk-secreting tissue (parenchymal tissue) in her udder than a gilt with 17 to 26 mm backfat. This difference was achieved by feeding varying amounts of feed throughout gestation (1.30, 1.58 or 1.83 times the maintenance requirements). Such findings are important to assist producers in maximizing potential milk yield of first parity sows and demonstrate that body condition must be considered. Feeding regime in gestation therefore has an impact on subsequent lactation performance of primiparous animals.

Sow milk yield is a major determinant for the growth rate of suckling piglets. It can be affected by various management strategies and one that requires more attention is optimal body condition of gilts. It is known that conditioning of gilts can impact their lifetime reproductive performance, hence longevity in the herd. However, recommendations for the ideal backfat to achieve at first parturition vary and the potential relationship between body condition of gilts in late gestation and litter growth rate is still not clear. Obesity, described as a backfat of 36 mm, has a negative impact on mammary development of late-pregnant gilts. Yet, it was not known if differences in backfat that are seen commercially do impact mammary development.

A research project was therefore undertaken at the Research and Development Centre of Agriculture and Agri-Food Canada in Sherbrooke to answer that question. It was carried out with 64 (Yorkshire x Landrace) x Yorkshire gilts that were bred with semen from Duroc boars. Gilts selected for the project had a backfat thickness at the P2 site of the last rib of 16.4 ± 1.0 mm at mating. They were then fed differently throughout gestation (see Table 1) to achieve backfat thicknesses of 12-15 mm (low, LBF), 17-19 mm (medium, MBF), or 21-26 mm (high, HBF) on day 110 of gestation. Animals were weighed and had their backfat thickness measured regularly during gestation to make adjustments in feeding when necessary. Blood samples were obtained from gilts on day 109 of gestation to determine hormonal and metabolic status. Animals were then slaughtered on day 110 of gestation to collect mammary glands for dissection into parenchymal tissue, that secretes milk, and extraparenchymal tissue, composed mainly of fat, and composition of the parenchymal tissue was determined.

Backfat thickness had an effect on mammary development (Table 2). The LBF gilts had less extraparenchymal fatty tissue and also less parenchymal milk-secreting tissue than HBF gilts. There was also less total fat in the parenchyma

of LBF gilts, which makes sense because they were thinner. Only one other measure of composition was altered in the parenchymal tissue of gilts. Thin LBF gilts had a parenchyma with a greater percent protein, however, when looking at it on a total basis, there was no difference in protein content of the parenchymal tissue between LBF gilts and the other 2 groups of gilts. Of all hormones and metabolites measured in the blood of gilts the day before slaughter, only leptin was affected. There was a tendency for leptin concentrations to be lower in LBF than MBF gilts and values were also 20 per cent lower in LBF than in HBF gilts. This was expected because the hormone leptin is secreted by fat cells.

In conclusion, these findings demonstrate that being too thin at the end of gestation (12-15 mm backfat) has a negative impact on mammary development of crossbred gilts, whereas having backfats varying from 17 to 26 mm has no apparent detrimental effects on mammary development. Backfat thickness in late pregnancy must therefore be considered to achieve optimal sow lactation performance, but one must remember that the exact backfat values obtained in the current project will likely vary depending on the gilt genetic background. Yet, the principle remains that one should avoid overly thin gilts at first farrowing to increase subsequent milk yield.

This project was funded by SwineInnovationPorc and Hypor, and semen was supplied by the Centre d'insémination porcine du Québec. ■

Table 1. Amount of feed provided daily (based on body weight at mating) to gilts during gestation for them to achieve a low backfat (LBF; 12-15 mm, 13 gilts), medium backfat (MBF; 17-19 mm, 13 gilts) or high backfat (HBF; 21-26 mm, 13 gilts) on day 110 of gestation.

	LBF	MBF	HBF
From mating to day 100 of gestation, kg			
body weight at mating, kg			
- 120	1.60	2.35	3.10
- 130	1.70	2.40	3.15
- 140	1.75	2.45	3.25
- 150	1.80	2.55	3.30
- 160	1.85	2.60	3.30
From day 101 of gestation onward, kg			
body weight at mating			
- 120	2.60	3.35	4.10
- 130	2.70	3.40	4.15
- 140	2.75	3.45	4.25
- 150	2.80	3.55	4.30
- 160	2.85	3.60	4.30

Table 2. Mammary gland composition on day 110 of gestation for gilts with low backfat (LBF; 12-15 mm, 13 gilts), medium backfat (MBF; 17-19 mm, 13 gilts) or high backfat (HBF; 21-26 mm, 13 gilts).

	LBF	MBF	HBF
Extraparenchymal tissue, g	1075[a]	1360[b]	1578[b]
Parenchymal tissue, g	1059[a]	1370[ab]	1444[b]
- dry matter, %	38.4	40.8	42.5
- fat, %	62.8	65.9	68.2
- fat, g total	255[a]	367[b]	394[b]
- protein, %	45.1[a]	31.3[ab]	29.4[b]
- protein, g total	14.9	176	179
- DNA, mg/g	10.9	10.0	9.0
- DNA, g total	4.4	5.6	5.4

[a,b]Means within a row with different superscripts differ significantly from each other

Optimum space allowances for nursery pigs

Submitted by Dr. Cyril Roy, Prairie Swine Centre

Introduction

Space allowances given to pigs can affect the economic viability of farms as well as the health and welfare of animals. While there has been significant body of research studying the effects of space allowances on grow-finish pigs, little information is available regarding the effects on nursery pigs.

Studies have shown that providing an optimal space allowance increases productivity by maximizing feed intake and the average daily gain of animals. However, optimum economic performance is influenced by high growth rates as well as by increasing the number of pigs per pen and overall barn throughput. The optimum space allowance for maximum economic returns is lower than that for achieving maximum growth rate. As well as affecting ADG, providing space allowances below optimal recommendations can also negatively affect the welfare of the pig, with risk of immune suppression, increased disease susceptibility, restriction of normal behaviours and an increase in damaging behaviours. As a result, establishing optimal space allowance requirements requires consideration of economic, health and welfare factors.

When recommending space allowances for farm animals, researchers use an 'allometric' formula which uses the average body weight and a constant (k) to calculate the space allowance needed per animal. When this formula was used to estimate space allowances for grow-finish pigs, it was concluded that a k value of 0.0335 (equivalent to 0.7m2 of space for a 100kg finisher pig) provided optimal space, and maximum ADG. When pigs were given more space, no increase in ADG was found, but when space allowance was reduced below this value ADG dropped, in proportion to the crowding.

The same space allowance (k value) has been proposed for nursery pigs, however, young pigs behave very differently from older animals and may have different space requirements. For example, nursery pigs perform more overlying behaviour, and thus may have a lower optimum space requirement than finisher pigs. With ongoing reductions in antibiotic use increasing concerns for animal welfare and getting the weaned pig off to a good start, finding appropriate space allowances based on animal behaviour, health and performance

considerations will be the way forward. This article presents some initial results from research done at the Prairie Swine Centre on space allowances for nursery pigs. The studies were carried out on a research farm and on two commercial farms. Measures included productivity (ADG), feed efficiency, behaviour and stress physiology, with the goal of identifying the critical cut-off at which crowding occurs and to address areas where uncertainty remains.

Methods

To compare effects on a research farm to those on a commercial site, the study was done in two phases with controlled trials at the Prairie Swine Centre in Saskatoon (phase one), and commercial trials at two farm sites (one in Saskatchewan and one in Manitoba, phase two). In phase one, a total of 1,200 weaned pigs were studied in the nursery rooms at Prairie Swine Centre for approximately five weeks. Piglets were given six different space allowances (k= 0.023, 0.0265, 0.0300, 0.0335, 0.0370, and 0.0390); pigs were weighed weekly, and pen size was adjusted to maintain the targeted space allowance.

Group size is another important factor affecting social interaction among pigs. Some researchers have argued that larger groups require less space, due to the increased sharing of free space, while others have disputed this finding. In phase one, pigs were housed in groups of 10 and 40 to study interactions between group size and space allowance.

Commercial trials (phase two) were done on two farms using the same six space allowance treatments used in phase one however, pens remained static in size. The number of pigs per pen was adjusted to target space allowance based on the nursery exit weight (25 kg), ranging from 19 to 32.

Feed use was recorded and pigs were weighed at nursery entry, three and five weeks. Cameras were placed above each pen in weeks one, three and five, to record standing, sitting, lying, feeding and drinking behaviour. Lesions on pigs were recorded to evaluate aggression, and saliva samples were collected on the research farm at three time points to measure pigs' stress response.

Results and Discussion

On the research farm, space allowance had no effect on the average daily weight gain, feed intake or feed efficiency. However, at commercial sites lower space allowances showed reduced average daily gain, particularly from midpoint (day 21) to end of the trial (day 45).

The lack of space allowance effects on growth on the research farm compared to commercial sites was likely due to the high health status and added care provided on the research farm. Space allowances were adjusted weekly on the research farm to increase the impact of space allowance, but despite this no impact on growth was seen. In contrast, the commercial sites had a constant space allowance, giving pigs relatively more space during their first weeks in the nursery with crowding increasing gradually over time, but space allowance had a significant impact. Antibiotic reduction studies have also found fewer effects in the research herd, due to the reduced challenge in a controlled, high health environment.

Behaviour measures can be helpful in interpreting these production results, as pigs will adjust their behaviour to compensate for crowding before changes in growth are seen. For example, in finisher pigs housed in large groups, studies show that pigs will adjust their feeding behaviour to eat fewer meals per day, with longer feeding bouts because it requires more effort to access the feeder. In this study, more nursery pigs were observed sitting at lower space allowances, and on commercial farms there was a large increase in sitting in week five, compared to weeks one and three. Sitting has been suggested to be a 'cut off' strategy is pigs and an early indicator of stress. Pigs also did less lateral lying (lying on their side) at low space allowances, presumably due to crowding.

Feeding and drinking behaviour were both affected by space allowance and group size. As space allowance was reduced, the total time spent feeding dropped from 49 to 44 minutes per day and the average length of feeding bouts decreased from two to 1.9 minutes. However, the number of feeding bouts per eight-hour day increased from 23 to 25. Similarly, for drinking behaviour, reducing the space allowance given to pigs resulted

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in less total time spent drinking, reduced the average drinking bout length and increased the number of bouts per day. However, when group size was increased, the total time spent drinking increased. One theory is that pigs in the larger group were more active and therefore drank more, however, this cannot be confirmed as water consumption was not recorded.

The behaviour of nursery pigs changed greatly during their time in the nursery. Sternal lying and overlying reduced as pigs grew, and sitting increased. Overlying behaviour showed the greatest change, and reduced by 50 percent after the first week. This observation refutes previous suggestions that nursery pigs require less space due to their propensity to overlie. However, this study shows that pigs' willingness to overlie is drastically reduced after first week in nursery, and is lowest at the end of the nursery period when space allowance is lowest.

Conclusions

In this preliminary analysis, lower space allowances (below k 0.0335) had a negative impact on average daily weight gain, especially between weeks three and five on commercial farm sites. Space allowance also affected the feeding and drinking behaviour and postures of pigs. Changes in behaviour can be used as an early indicator of potential impacts on productivity. Overlying behaviour reduced significantly soon after weaning, indicating that pigs are less willing to overlie at the end of nursery phase, when pigs are most crowded, so this behaviour cannot be used to justify reduced space allowances.

While further analysis is needed to draw firm conclusions from this study, the results indicate that pigs reared under commercial conditions were more susceptible to crowding stress than those managed under research farm conditions. Weaning and nursery are critical stages in pig production and are highly stressful. With increasing pressure to reduce antibiotic use, it will be even more important to consider space allowances in the nursery, and to ensure that pigs get a good start on life.

Dr. Cyril Roy

Cyril Roy is a post-doctoral researcher who has joined the ethology team at Prairie Swine Centre in February 2017. He is working under the leadership of Dr. Jennifer Brown (Prairie Swine Centre) and also works in collaboration with Dr. Yolande (University of Saskatchewan) when necessary.

Three research projects that Cyril is currently working are

- Understanding the effects of mixing sows at different time points after weaning on production and aggressive behaviour
- Understanding the effects of different types of enrichment for gestation sows and their effect on health and behaviour, and
- Effect of different housing density in nursery pigs.

Another project Dr. Roy will be associated shortly is "welfare issues associated with transport of young pigs." His other responsibility includes developing and implementing research protocols for behavioural studies, data analysis, and interpretation, preparation of final reports, articles for technical publication, scientific abstracts and papers, and grant applications.

Cyril worked for four years in the Canadian farm animal sector, three years managing dairy herds and one year as a manager in a hog production unit. While working with the Canadian swine sector, he was involved in the implementation of management practices such as conversion of farrowing crates to enriched pens, the introduction of pain management procedures for castration and group housing of sows at various stages of breeding management.

Cyril's doctoral research focused on welfare assessment of horses transported for commercial purposes in Canada, the USA, and Iceland. His research also focused on identifying risk factors to develop mitigation strategies for the identified welfare issues. Before doing his Ph.D., Cyril obtained a Master's degree in Applied Animal Behaviour and Animal Welfare. His bachelor degree was on Veterinary Sciences. Cyril's research interests revolve around finding practical solutions to improve farm animal welfare which can be backed up by evidence based research. ■

YOUR DAILY BACON

BY BUDDY SIMMONS

Horror hogs of Hollywood

As we all know, pigs are pretty good folk. In past installments of Your Daily Bacon, pigs have been shown to be smart, courageous, heroic, and talented – both in fiction and in real life. Unfortunately, sometimes pop culture, particularly Hollywood, isn't shy about employing exploitation to make a buck, and has not missed opportunities to malign our poor porcine pals. Let's take a look at those thankfully fictitious celluloid characters, which, in the spirit of Halloween, we'll call the "Horror Hogs of Hollywood".

Last time around, we revealed the legendary Black Swine of Hamstead, a herd of feral pigs rumoured to roam the sewers beneath London. They were an absolute myth, of course. But they were not the last bad-boy pigs to be created from the imagination of humans. What follows is a short rogue's gallery of maligned swine.

Exhibit A: "Jodie" from the movie "The Amityville Horror" (1979)

This movie was based on the 1975 book by the same name, which was a sensation at the time of publication. Its popularity was achieved mainly by virtue of it supposedly being the true story of a hapless family who moved into a haunted house on Long Island, New York, where notorious multiple-murders had taken place, which was the only grain of truth in the entire

tale. One of the children in the family, a little girl, made an imaginary friend there which she called "Jodie". This friend, whom the book claimed was far from imaginary, was one of the more iconic elements of the tale. He was scary, big, had red glowing eyes and was utter nonsense, as the "true story" was revealed many years later as being a hoax (no surprise there) dreamed up over a few bottles of wine by the heads of the household and the defense lawyer of the man who committed the murders in the home. It is probably a given that the group decided to ride the wave of interest in tales of hauntings, making a boatload of money in the process.

At least in this case, Jodi was not an actual pig, but some kind of ghostly manifestation of the evil spirits. Or whatever it was they were pretending infested their new home. The movie spawned a slew of sequels – an astonishing eighteen, in fact. Many of which were direct-to-video, each worse than the previous, and there was also a remake of the original. To be fair, taken with a very large grain of salt, the book was actually pretty scary, and the original film was not terrible, nor was the 2005 remake. But all the rest made in the interim between the two were merely examples of Hollywood not being adverse returning repeatedly to the trough. I cannot recall Jodie the pig making an encore performance in any of them, but I gave up on the stupid movies after the first three and only returned to watch the remake.

Exhibit B: "Motel Hell" (1980)

This one really doesn't fit that well, but it did have a connection to pork and a rather iconic scene, so it is being tossed into the mix by virtue of those tenuous connections. It was a dark comedy/horror flick concerning a farmer who made meat-products and ran a small motel on the side. His slogan for his products was "It takes all kinds of critters to make Farmer Vincent Fritters". We'll just say that his definition of "critters" would be looked at with a very jaundiced eye by meat inspectors. You see, Farmer Vincent's Motel was like a roach motel... guests checked in, but they didn't check out, and we'll leave it at that. He took great pride in not using artificial preservatives, though, which would probably garner him a pass in some modern circles these days.

As alluded to at the opening of this entry, the film is only being included here by virtue of his decision to terrorize a hapless group of potential victims during the film's climax by putting pig's head over his own and chasing the terrified guests around with a chainsaw. Which was a pretty bizarre thing to witness, to be honest. Oh, and when he got his just desserts, his dying statement was a guilty confession– he croaked, "I...used...preservatives!"

My own confession: *I have a soft-spot for this one, since it was not intended to be taken seriously, it was kind of fun. It alone on the list of one that I consider to be entertaining along with possibly the original "Amityville Horror".*

Exhibit C: "Razorback" (1984)

Another stretch for the subject, it is closer to a land-based version of Jaws, using a wild boar in place of a shark. Set in Australia, it opens with a child being dragged off by the renegade hog, resulting in the child's grandfather being put on trial for the death of the child. He was acquitted, however.

But the dastardly pig was not finished. He next targeted and killed an American reporter, which prompts her husband to investigate. He enlists the aid of a hunter and a lady farmer to help track the boar and serve justice and hopefully to serve bacon.

On reflection, calling it a land-based version of "Jaws" is being a little too generous, it pretty much was a blatant rip-off of that movie, right down to the trio of protagonists seeking to put an end to the menace. It was closer to the "Man vs Nature" genre than horror, as I recall. It wasn't terrible, but I wasn't very impressed, personally.

And there you have it, a small collection of unfortunate pork misrepresentation. There are a few more, (I seem to recall pigs playing a rather dubious role in the sequel to the hit move The Silence of the Lambs) but beyond that and the ones described, it isn't that much of a fertile field for screenwriters, thankfully.

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40th Annual Saskatchewan Pork Industry Symposium
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Join us for the 40th anniversary of Saskatchewan Pork Industry Symposium. We're excited about this year's panel of local and international experts who will offer practical information and advice to meet the challenges of swine production in an ever-changing environment.

DAY 1 – November 14, 2017

- Dr. Ellen Goddard, University of Alberta – Producer vs Consumer Perceptions on Production, Health and Welfare and Technology
- Curtiss Littlejohn, CanArm AgSystems – Moving Towards Electronic Sow Feeding Systems
- Dr. Jeff Bergermann, Olymel – Needle-free Injectors –Usage and Precautions
- Dr. Susan Detmer, Western College of Veterinary Medicine – Zoonotic Diseases
- Dr. Brad Chappell, Swine Health Professional Services – Lessons Learned from PED
- Audrey Cameron, Canadian Pork Council – Canadian Pork Excellence Pilot Program
- Chuck Schwartau, University of Minnesota – Mastering Time Management on the Farm

Concurrent Sessions

Wayne Cast, PIC North America - *Sow Feeding Management: What's New?*
Ramon Martinez, Hypor - *Care and Handling of Boars*

The banquet and Awards of Distinction presentations will be held on Tuesday, November 14.

DAY 2 – November 15, 2017

- Chuck Schwartau, University of Minnesota - Giving New Employees a Successful Start!
- Dr. Rex Newkirk , Canadian Feed Research Centre – Increasing Profitability of the Livestock Sector Through Feed Processing
- Dr. Steve Meyer, EMI Analytics – North American Outlook for Pork
- Michael Young, Canada Pork International - Verified Canadian Pork: The Farm to Table Quality Assurance Advantage for the Global Marketplace
- Dr. Yolande Seddon, University of Saskatchewan – Long Distance Transport of Swine: a Study Update
- Research Connections: U of S Graduate Students presentations – Finalists of the Swine Abstracts Competition "NEW"
- Lee Whittington, Prairie Swine Centre Inc. – 25 Years of Making Research Work!

The Saskatoon Inn and Conference Centre, 2002 Airport Drive, is offering a conference rate of $159.00 for Standard Double Queen rooms. The room block is in effect and we encourage you to reserve early by calling reservations at (306) 242-1440 or emailing *reservations@saskatooninn.com.*

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Now let's leave these movies about killer pigs behind and move on to some killer memes! Speaking of memes, you might notice that there is a bit of a theme this time around, with a couple exceptions that we decided to throw into the kitty for good measure. ■

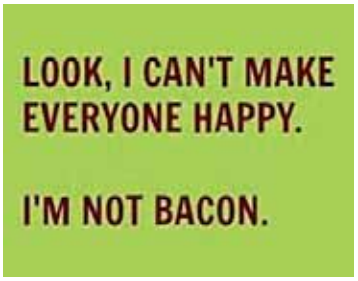
It isn't ripe yet, silly kitten!

There are worse things to wake up to.

Yes, breakfast without bacon is very horrible.

You always will have a captive audience if you have bacon!

This is an equal-opportunity column, so we had to let him in.



If you don't like this issue's memes, jut remember this.

Hey, we LIKE spiders! Just not with our bacon, let them get their own!

Or in the next town, really.

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