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Cover Photo
These contented piglets, lying by their mother's udder, are ready for weaning

Passion for pork

Page 38

Editor's Notes 4

News and Views 6

Industry Viewpoint 12

London Swine Conference

- Advanced sow troubleshooting 20
- Opportunities for Canadian pork exports 22
- Optimizing nursery productivity 25
- The impact of lameness on sow productivity 29
- Why benchmarking is important 32
- Large group auto-sort systems for finishing pigs 34

Special Features

- Promoting our passion for pork 38
- The nutritional value of green canola seed fed to growing-finishing pigs 39
- Assessing lameness, productivity and longevity in sow housing systems 43
- Gelatin in semen may extend storage life 46
- Would Alberta's pork industry benefit from immunocastrating boars? 47
- Happiness and the pig 50
- Managing manure phosphorus 54
- Nutrient disruption: A performance and animal welfare issue 57
- Low stress pig handling: Understanding the principles 60

Health

- How do you like your ribs? *Actinobacillus suis* and chest adhesions 63

International Round-up 66

View from Europe

- Are rescue decks too expensive? 68
- Pigs and politics 71
- Pioneering IMF technology boosts profit in pork 73

Pigs Down Under

- Slim margins and sow housing key issues for Aussie producers 75

Ad Index 78

Western Hog Journal

Editor's Notes

Alberta Pork's new promotion program - A Passion for Pork - is a welcome initiative and will help to re-establish a connection with the province's consumers. Since it closed its Consumer Services office in Calgary nearly two years ago, there has been no significant promotional work going on. This campaign, and promotional activities in other provinces, help to communicate the benefits of purchasing locally produced pork and will engage the consumer, hopefully resulting in increased demand and customer loyalty. A local approach allows producers, through their representative body, to get involved in events where they can positively influence consumer perception of our industry and the pork we produce.

Local promotion, however, is only part of the activities that are needed to make Canadian pork the product of choice. The national initiative started in 2008 by Pork Marketing Canada - which included labelling retail pork packs with a 'Canadian Pork' sticker - faded out in 2010 and has been pretty well dormant since. The promotional website putporkonyourfork.com is out of date and the last news release is dated February 11, 2010. What sort of message does that send to consumers? Worst of all, it is virtually impossible to differentiate Canadian from US product in the store, so consumers just don't know what they are eating. US processors have taken full advantage of this situation and now around 25% of the pork we eat is from the USA. Pork imports from the USA were up 26 percent in the first quarter of 2012.

The establishment of a well coordinated and well funded national promotion body is long overdue. Promotion should be linked to a Canadian pork quality mark that means something to consumers and is backed up by an independently audited quality assurance scheme. With that in place, pressure can be put on retailers to stock Canadian pork and not use obscure labelling to hide the provenance of pork and pork products. Professional marketing executives should be hired to get the message across that Canadian pork is a nutritious, healthy and convenient choice of protein.

The average consumer will always prefer to buy a Canadian product, but currently they are unable to identify if pork is home produced or imported. Pork promotion in our own market needs to be given top priority by our industry leaders. ■

Barrie Peet

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Liqui-Pro plasma protein now available in Canada

Pro-Ag Products Ltd, of Winnipeg, MB and US company TechMix have announced the launch of Liqui-Pro, a ready-to-use liquid formulation delivering plasma proteins via the drinking water.

"TechMix is pleased to launch another TechMix product in Canada," says Mike Nelson, President of TechMix of Stewart, Minnesota. "With the success of Baby Pig Restart and more recently Blue Start in Canada, we are now able to supply producers with another beneficial tool for use in the nursery phase."

Liqui-Pro is designed to deliver energy and plasma proteins through the drinking water. By adding plasma proteins through the water, Liqui-Pro helps to prevent nutrient disruption until dry feed intake has increased.

Liqui-Pro is a complimentary product to Baby Pig Restart and Blue Start, commonly used in pigs across North America. Liqui-Pro was developed by the TechMix team of veterinarians and nutritionists. TechMix products are distributed in Canada by Pro-Ag Products. For further information, call (204) 231-0236, toll-free 1-800-806-2737, or go to www.pro-ag.com.

George Foxcroft retires from the U of A

Dr. George Foxcroft, who has recently retired from the University of Alberta

Well known swine reproduction researcher Dr. George Foxcroft retired from the University of Alberta at the end of June, after a career spanning 45 years. A native of Yorkshire, England, he obtained his BSc in Agricultural Sciences at Nottingham University, specializing in Animal Physiology and Embryology. His PhD research involved re-breeding rabbits during lactation, but then, a post-doctoral position at the University of Illinois brought him in contact with pigs. "That was the beginning of a long story!" exclaims George. Returning to Nottingham in 1974, he worked with the late Dr. Des Cole, establishing a physiology program and working on gilt maturation, and the physiology of the lactating and weaned sow. He founded, jointly with Dr. Cole, the Nottingham Easter School meetings, held every four years, which became the International Conference on Pig Reproduction.

George moved to Canada in 1988 to become Research Chair at the University of Alberta, a position funded by Alberta Pork. Until his retirement, he led the Swine Reproduction-Development Program. Since 2007 he has also been Co-Director of the NSERC EmbryoGENE Strategic Research Network. The focus of his recent work and the area which he feels is a major achievement is the phenomenon of pre-natal programming and its implications in swine production systems. In addition to being widely published in the scientific journals, George has worked extensively with pork production systems in North and South America to optimize breeding herd management and to conduct innovative research projects in a commercial setting. He will be spending some of his time in retirement working for the Australian Pork Cooperative Research Centre.

Workshop topics include new technology and management

The 2012 Red Deer Swine Technology Workshop, being held on Wednesday October 31st, will feature a wide range of topics focussed on the needs of barn staff, managers and owners.

The program combines presentations on new technology, management and stockmanship aimed at helping delegates improve productivity and reduce costs. Dr. Mary Lou Swift of AARD will be describing how the use of NIR technology can lead to significant feed cost savings and demonstrating the system during the breaks. Using technology to optimize the pig's environment and solve

CONTINUED ON PAGE 8

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ventilation problems will be discussed by Dr Mario Ramirez of Gowans Feed Consulting.

"The panel discussion on reducing costs in the barn was very popular last year and so we are having a panel of nutritionists discussing hot feeding and nutrition topics," says Bernie Peet, the workshop manager. "Delegates are encouraged to come along armed with some questions to ask the panel." Other topics include management of the gilt up to first farrowing, optimizing herd parity structure and the impact of stockmanship on individual pig care.

The workshop will be held at the same venue as previously, the Exhibition Hall at the Sheraton Hotel (formerly the Capri Centre) in Red Deer. Registration costs $75, with a special "5 for the price of 4" package available for $300. For further information or to register, contact Bernie Peet at Pork Chain Consulting Ltd. on (403) 782-3776 or (403) 392-3104 or email bjpeet@telusplanet.net

Feed processing is more than just grinding

What's the first thing that comes to mind when you are asked about the impact of processing on feed efficiency? We usually think terms of fineness of the grind. But how can we benefit if we look at feed processing differently? What if we increase our understanding of how to process feeds (grinding, conditioning, pelleting or extruding, cooling, etc.) so that feed value is more consistently increased? These were some of the questions addressed by Dr. Tom Scott, University of Saskatchewan, during a recent Prairie Swine Centre "Focus on Feed Efficiency" webinar: New Feed Processing Technologies that May Influence Feed Efficiency.

"One of the challenges in feed processing is the variation in ingredient quality. Protein, energy, fusarium contamination, sprouting, and other factors can vary within a sample and significantly more over an entire field," notes Scott. "Consequently we feed based on averages. How can we use this natural variation to our advantage?"

Leading edge seed sorting technology (BoMill Tri Q 30 seed sorter) has the ability to sort individual seeds into three separate fractions based on NIR (Near Infrared Reflectance) crude protein levels. "With this technology we are able to take a sample of barley with an average protein level of 11.4% and sort it into three composite samples that average 10%, 10.8%, and 12.4% protein respectively," explains Scott. "Therefore we would be able to take these samples and utilize them where the greatest gains would be possible."

> **"This type of sorting technology provides us an opportunity to manage variability"**

"Opportunities also exist in cases where we have fusarium contaminated grain and would be able to sort out the fusarium contaminated kernels, increasing the potential feed stock available to the livestock industry," he adds. "This type of sorting technology provides us an opportunity to manage variability. If we can measure it you can pay for it, select for it, adapt specific processes to accommodate it and select specific additives or enzymes to make the grain consistently better."

New appointment at Hypor

Swine genetics company Hypor Inc. has appointed Greg Simpson to the position of Nutritionist and Product Manager for North America. Greg comes to this role with more than fourteen years of swine nutrition experience, most recently as a swine nutritionist with Ontario's Ministry of Agriculture, Food and Rural Affairs. Greg has a MSc degree in monogastric nutrition from the University of Guelph.

CONTINUED ON PAGE 10

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The impact of dietary enzymes on nursery pig performance

Research into the effects of using enzyme supplementation in young pig diets has shown the effectiveness of these products in improving gut health, while increasing growth rate.

Two products, Superzyme-CS and Superzyme-W, from Canadian Bio-Systems Inc. (CBS Inc.),were used in a series of studies into the benefits of using enzymes for young pigs, which were directed by Dr. Bogdan Slominski of the University of Manitoba. These early investigations included breakthrough results showing the pre-biotic effects of enzyme supplementation in nursery pigs.

Superzyme-CS is an enzyme supplement designed for diets which use proteins such as soybean, canola, peas, and grains such as barley, wheat and corn. Superzyme-W is designed for use in feed where 70 percent or more of the grain is wheat – the product is also effective on other cereal grains and plant protein sources.

"The use of enzymes provides a viable, natural alternative to traditional growth promoting products"

The enzyme formulations used in these studies were specifically blended to produce the benefits shown. These included a reduction in the acute impact of *E. coli* infection, enhancement of nutrient absorption and gut health and an improvement in average daily gain and feed intake. The results show that the use of enzymes provides a viable, natural alternative to traditional growth promoting products, says CBS.

Among the key results in these studies, infected pigs had 10 percent reduction in pathogen colonization and 34 percent improvement in daily gain. The specific blends of enzymes used in these studies was critical to the results, says Rob Patterson, technical services manager of CBS Inc. "The use of CBS enzyme formulations was consistent not only in the main studies, but also in all preliminary enzyme research leading up to the selection of enzymes for this research."

More information on CBS and its products is available at www.canadianbio.com or by contacting Owen Jones or Rob Patterson on (403) 279-3339 or toll free: 1-800-561-2474.

Canadian swine industry secures market access to Ukraine

The Canadian swine industry will benefit from market access to Ukraine, Agriculture Minister Gerry Ritz announced on June 1. Effective immediately, he said, the Ukrainian market has been re-opened to Canadian live swine and opened for the first time to Canadian swine genetics.

"This success demonstrates our Government's commitment to opening as many markets as possible around the world for Canadian products," said Minister Ritz. "The Harper Government will continue to help producers find new and better opportunities to increase revenues at the farm gate, which will create jobs, growth and long-term prosperity in the agriculture industry."

While in Paris for the 80th session of the World Organisation for Animal Health (OIE) last week, Canadian and Ukrainian officials met to discuss export conditions for many products.

The Harper Government will build on this momentum by continuing to work closely with Canadian producers and the Ukrainian Government to maintain, open and improve access for agricultural and food products. In 2011, Canada exported more than $22 million worth of agriculture and food products to Ukraine. Canada and Ukraine are also currently in negotiations towards a free trade agreement.

Ukraine currently imports approximately $4.5 million worth of purebred swine annually. While live swine were previously exported from Canada to Ukraine, a new export certificate has been negotiated by the two countries to address Ukraine's recently revised import requirements. This access will create an opportunity for Canadian exporters of high-quality Canadian purebred swine to take a share of the Ukrainian market.

DNA traceability improves food safety

DNA technology promises to make food traceability more precise and reliable while boosting consumer confidence, says Ciaran Meghen, managing director of IdentiGEN Ltd., which specializes in DNA traceability.

"IdentiGEN's DNA TraceBack allows the food industry to trace whole muscle cuts from the grocery store shelf to the individual animal," Meghen explains. "Genetic technology can help processors issue more targeted food safety recalls." Alberta processor Sturgeon Valley Pork is one Canadian company using the technology to assure customers that its products are premium Alberta pork.

"Food safety and premium brands are driving the need for traceability, and the technology has improved since its inception"

"DNA traceability can also be used for ground meat as long as reference samples from individual carcases can be collected," notes Meghen. "But implementing DNA traceability for ground meat produced in large processing plants is more complex." The practice of aggregating material from a wide variety of sources makes it impossible to identify the original group of carcasses or animals that would have contributed that raw material.

IdentiGEN has teamed up with Canadian researchers at the University of Guelph to adapt DNA traceability to ground beef products. They aim to develop a batch-based identifier that will link ground beef packages to a manufactured batch, improving traceability.

Meghen sees a bright future for DNA traceability. Food safety and premium brands are driving the need for traceability, and the technology has improved since its inception. "We're on the third generation of DNA fingerprinting technology and the cost continues to come down. It's feasible to put a DNA tracing structure into any meat supply chain and for the impact on price to be measured in pennies per pound of the finished product or less." ■

Industry Viewpoint

By Bernie Peet

Over the last few years, the Industry Crisis column has looked at what has been going on in the Canadian industry as our producers have battled a series of unprecedented challenges which has seen the industry reduce in size by nearly a quarter. WHJ Editor Bernie Peet continues to review industry events and trends that will shape the industry in future, both in North America and around the world. He will comment on industry developments and how they impact Canadian producers, providing his unique perspective and personal viewpoint on the important issues.

Spring price rally fails to materialize

Following a winter which saw hog prices remain relatively high, the anticipated rally in prices normally seen in spring failed to materialize. At the time of writing, the hog price is around $1.50 - $1.55, very similar to the price through much of the winter, despite a weaker Canadian dollar. Producers who could have locked in to some very attractive prices for the summer period through forward pricing programs or schemes such as Alberta's Hog Price Insurance Program, were left with egg on their faces as futures markets tumbled.

> **"US exports of pork into Canada continue to increase, with a massive 26 percent more pork coming into the country during the first quarter"**

The continuing improvement in productivity in the US breeding herd has been mentioned in this column before as a potential threat to hog prices. Combined with higher carcass weights, this is pushing the annual increase in pork production up by around 3 percent each year and will probably do so for several more years. In contrast, Canadian production is now very stable in terms of output. First quarter data show that the number of hogs slaughtered was just 0.1% less than the same period in 2011, while live hog exports were down by 0.9 percent. It is likely that Canadian producers will continue to be squeezed by increasing output from the US industry, especially if the Canadian dollar remains relatively strong.

Some observers believe that the large amount of pork in cold storage is keeping the lid on

Over 25% of pork consumed in Canada is imported and this shopper may not know where the pork she buys is produced

prices. USDA's latest cold storage report says that there were 659.5 million pounds of pork in cold storage at the end of April. "That is up 8.1% from the month before, up 20.1% from a year ago, and the most pork in cold storage since April 30, 2008," says economist Ron Plain from the University of Missouri. The big jump in pork stocks may indicate continued strong pork exports, he suggests. "In recent years, there has been a positive correlation between frozen stocks and pork exports. For example, the amount of pork in cold storage on April 30, 2008 was a record and the amount of pork exported in May of 2008 was also a record."

Fortunately, the US has been expanding its exports. Exports for the first quarter of 2012 were 8 per cent higher in volume (598,058 metric tons) and 20 per cent higher in value ($1.66 billion) than last year's record pace, according to statistics released by the USDA and compiled by the US Meat Export Federation (USMEF). Exports equated to 27.8 per cent of total US production of muscle cuts plus variety meat, and 24 per cent when including muscle cuts only. The success of the US in exporting this volume of product continues to support the North American hog price.

US exports of pork into Canada continue to increase, with a massive 26 percent more pork coming into the country during the first quarter; 55,916 tonnes with a value of just under $200 million. Imports now account for more the 25% of all the pork consumed in Canada.

Canadian hog numbers still stable

Although the total number of hogs on Canadian farms on April 1 was up 1.8 percent from a year earlier, sow numbers were virtually unchanged at 1.3 million. In Eastern Canada, overall hog numbers increased by just 0.6%, with only Quebec showing an significant change, having 3.0 percent more hogs. There has been some expansion in the western provinces, with an overall 3.3 percent increase in total hog numbers. Saskatchewan showed a 13.8 percent increase, while the number of hogs in BC increased by 13.9%.

The first quarter pig crop was 0.9% higher than the same period in 2011, at 7.3 million head. As sow numbers have hardly changed, this increase must be the result of productivity

CONTINUED ON PAGE 14

improvements. Year on year, the number of hogs slaughtered in the eastern provinces declined by 1.7 percent, while that in the western provinces increased by 2.3 percent.

Looking at the overall North American situation, total hog numbers have increased 2 percent over the year to the end of March, while sow numbers remained the same. With continuing high feed prices and lower than expected hog prices, there is no appetite for expansion, either side of the border. Producers are currently making slim margins, if any, and are not making sufficient profit to replace the huge loss of equity sustained in 2007-10.

Will the COOL problem be resolved?

Canadian producer organizations are hoping that the World Trade Organization (WTO) will dismiss the appeal by the USA against its initial ruling and bring an end to the long running saga that led to a 50 percent reduction in the number of live pig exports from Canada. In May, the WTO Appellate Body heard the United States' appeal of a November 2011 WTO ruling that US Mandatory Country of Origin Labelling affords US produced livestock preferential treatment and violates US trade obligations. The decision is expected this summer.

If the WTO decision stands on appeal, the United States must comply with it, or risk a trade war with Canada and Mexico. The United States would be called upon to remove its WTO-inconsistent measures, according to the National Pork Producers Council. However, US economist Steve Meyer says that this process could take up to a year because it will need legislation to be enacted. "The administration could change the rules to meet what WTO is demanding, but the problem is the law is pretty prescriptive and most of us don't really think there's a lot of wiggle room to change the rule so that it meets WTO demands and still meets the letter of the US law," he said in an interview with Farmscape.ca. "For that reason most of us think that it's going to be a legislative fix in that Congress is going to have to change the actual law in order to meet the WTO conditions and that's more difficult to do."

Burlington pork plant changing hands

Sofina Foods Inc. and Sun Capital Partners Inc., a leading private investment firm, have announced that they will be acquiring 100 percent of Fearmans Pork Inc. Sun Capital bought the Burlington facility - the single largest pork plant in the province - and the Fearmans trademark from Maple Leaf in late 2010, then re-established the plant as a stand-alone business under the plant's former name. Fearmans will become a wholly owned subsidiary of Sofina.

Michael Latifi, Sofina's Chairman and Chief Executive Officer stated, "This acquisition provides Sofina with secure access to high quality raw materials that will allow us to grow our fresh meat markets and build and sustain our further processed protein business."

"Fearmans Pork has made great strides as a standalone business," said Marc Leder, Co-CEO at Sun Capital Partners. "Management has effectively created an infrastructure and

CONTINUED ON PAGE 16

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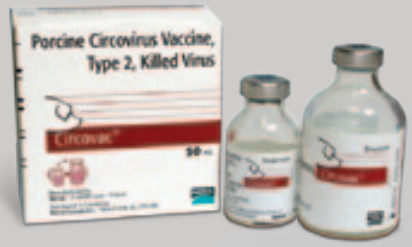

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Failure of some EU countries to meet the deadline for introducing group sows housing systems may cause significant disruption in the pork market

stabilized hog procurement, which assures the region's hog farmers that they have a committed and capable partner. Sofina Foods is a natural steward for the next stage of its growth."

As a result of this acquisition, the combined Sofina operations will supply retail and foodservice customers across Canada and into the United States with 13 primary and further processing operations in British Columbia, Alberta, Saskatchewan, Ontario and Washington State.

EU braces for sow stall fallout

Industry observers in the EU are still unsure about the likely effects of the partial ban on sow stalls which comes into effect on January 1 2013. And, as if that wasn't a sufficient hurdle for producers, high feed prices have been responsible for a reduction in production, even before the legislation bites. An updated census published in mid-May shows that the total number of pigs stood at 148.6 million, 1.5% lower than a year earlier. The biggest falls have been in central and eastern member states such as the Czech Republic, Slovakia, Lithuania and Slovenia, which all saw double-digit reductions.

> **"The factors which drove so many UK pig producers out of business will now begin to affect the rest of the EU"**

It appears that many countries will be a long way from making the change to group housing. A recent report by the British Pig Executive (BPEX), which examines the potential impact of the regulations, says that it will have a major impact on the pig sector and has the potential to cause serious disruption to the market. "The factors which drove so many UK pig producers out of business will now begin to affect the rest of the EU as it comes more into line with the animal welfare standards of the UK." The British industry has been pressing the EU to take a hard line with non-compliance, which could lead to a mass exodus of producers,

especially in countries such as Spain, Italy and Greece where implementation to date is low.

"Pig production is likely to fall by between 5% and 10% and processors and retailers are likely to face substantial price increases," notes the BPEX report. "Similar animal welfare legislation in the laying hens industry which came into force on I January 2012 has caused serious disruption to the egg industry where the price of shell eggs is 75% higher than a year ago." Price increases would inevitably be passed on to consumers, BPEX says, possibly putting pressure on politicians to act to increase pig meat supplies, especially in those Member States where per capita consumption of pig meat is comparatively high.

At the end of May, Ireland asked the European Commission to extend the deadline for the conversion to sow group housing. Despite the European deadline of January 1, 2013, the Irish hope to be allowed to finish completion by September. The Irish government has provided grant aid to producers for conversion of facilities at a rate of 40%, with a maximum grant of €120,000. It extended its deadline for applications from June to 31 October 2012, which is why it is asking the EU for the extra time for compliance.

Is the sow stall battle lost?

In the last issue of WHJ, we highlighted the growing pressure on the North American pork industry to move away from sow stall gestation housing. Since then, in just a short few weeks, there has been a veritable barrage of announcements by restaurant chains, food service companies and supermarkets saying that they intend to source their pork products from systems not using stalls at some point in the future.

> **"We believe there are better, more humane and sustainable housing systems that can improve the quality of animals' lives"**

Burger King Corp. has said that it will transition to 100 per cent cage-free eggs for all US locations within five years, and only purchase pork from suppliers that have documented plans to end their use of gestation crates for breeding pigs. The National Pork Producers Council responded by saying that it is concerned that such action will significantly increase production costs – and eventually consumer prices – forcing US hog farmers out of business and leading to more consolidation of the pork industry, all with no demonstrable health benefits to sows. It also criticised the involvement of the Humane Society of the United States (HSUS) which has been lobbying both pork production and food companies strongly on the issue.

The Canadian-based Tim Horton's restaurant chain subsequently announced that it would require its suppliers to develop clear plans for phasing out sow stall housing by the end of the year. The company has already committed to sourcing at least 10% of its eggs from 'enriched' housing systems by the end of 2013. "We're calling for an end to gestation stalls for sows and to significantly increase the use of alternative-housing systems for hens. We believe there are better, more humane and sustainable housing systems that can improve the quality of animals' lives," said Paul House, Tim Hortons president and chief executive officer. "Striking a balanced, realistic solution for the farming

CONTINUED ON PAGE 18

community, which will need to make significant investments in new buildings, is essential and we fully recognize this will take time."

Safeway Inc. has announced that it will begin formulating plans to have a gestation stall-free supply chain. Gestation stalls have been criticized in recent years due to animal welfare concerns, and Safeway has been working to address the issue, says the company. Over the last several years, the company has substantially increased the quantity of pork it buys from producers that have made commitments to decreasing gestation stalls in their breeding facilities.

"It is Safeway's goal to have a gestation stall-free supply chain," said Safeway vice president of public affairs Brian Dowling. "With that in mind, the company is formulating plans to determine how it can reach that goal."

NPPC commented: "While NPPC respects the right of companies to make business decisions that are in their best interests, it seems that Safeway was intimidated by an animal rights group whose ultimate goal is the elimination of food-animal production."

Finally, in mid-May, restaurant chain Denny's said that it will require its suppliers to provide pork from systems that do not use gestation stalls, although it did not state a specific time period. "We will endeavour to purchase products from companies that provide gestation crate-free pork and are committed to influencing our suppliers to share in a gestation crate-free vision for the future," Greg Linford, Denny's vice president, procurement and distribution, said in a news release. "Working to eliminate gestation crates is best for our company, our guests and our continued work to improve animal welfare."

So far, most of the impact from these announcements will be felt in the USA, rather than Canada. However, there is already some pressure here for producers to phase out stalls. The draft new welfare codes of practice are likely to include a provision for phasing out sow stalls over a period of 10-12 years. As the demand for "stall-free' pork from restaurant, food service and retail sector increases, there will be economic pressure for change. Key export markets, such as Australia and New Zealand, are currently in the process of changing to group housing and will almost certainly demand that imported product meets the same standards. And with Canada looking to the EU as a potential market for pork, the imminent EU partial ban on stalls will present a trade barrier if we are unable to produce pork from systems with group sow housing. The industry needs a coherent plan to move towards group housing in order to ensure that productivity and animal welfare are not impacted by the change and that producers are able to transition without undue financial hardship. ■

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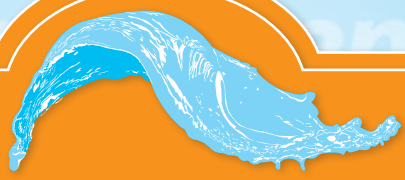

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Advanced sow troubleshooting

Sow production in the 21st century is at an unprecedented plateau of efficiency and performance, believes Dr. Kevin Vilaça, with South West Ontario Veterinary Services. In conjunction with this new generation of finely-tuned animals, however, there is less tolerance for any challenges that may present themselves within a population, he says. It is imperative, as never before, that management understands the level of sensitivity that is required to keep the operation functioning smoothly. Troubleshooting is a vital component of dealing with any issues – great or small – that have the potential to obstruct maximum production output, Vilaça suggests. Rapid detection is the prerequisite for early intervention, he stresses, in this paper co-authored with Paul Ferreira of Grand Valley Fortifiers and Ryan Martin of RFW Farms.

Troubleshooting can be roughly divided into two categories:

1. **Dealing with problems**
2. **Preventative maintenance**

A producer should never reserve his troubleshooting skills for the times when some obvious phenomenon is occurring in the sow herd. He should always have his metaphoric antennae sending out signals and measuring the response of his environment. An ounce of prevention is worth a pound of cure! The principles that are presented in this paper apply to both aspects of troubleshooting.

Albert Einstein once defined insanity as: "Doing the same thing over and over again and expecting different results". Sow producers can settle into a deep groove where it concerns the status quo but are continually frustrated with the inability to take productivity and control to the next level of prosperity. Effective troubleshooting keeps one finger on the pulse of the latest technological advances while keeping the other firmly on "real life" in the barn. The process of exposing our system's weaknesses and inefficiencies is a moving target; the answer may point one direction one minute but readjust its focus after exposure to the latest scientific release suggesting otherwise. This position cannot be justly accused of being indecisive shilly-shallying but prudent "moving with the times".

> **"It is a healthy exercise to lay aside our feelings from yesterday and deal with reality today"**

Sometimes, one cannot "see the forest for the trees". When a producer becomes burdened down with the same routine, animals and barn every day, he can lose sight of the big picture. It is a healthy exercise to step back and get glimpse of the panoramic view of the operation. It is also good to get the 10,000-foot view and compare the position of one's business with the rest of the industry. A detached system of troubleshooting can give a producer wide perspective as he prepares to deal with issues surrounding the farm.

Personal attitude can be a primary impediment to effective troubleshooting. The following points outline the most common mistakes that producers make:

- **Discipline to face reality:** Do I have a problem? In the daily, mundane routine of working in a swine facility, herds-people can be the most insensitive to subtle changes that may be exhibiting themselves in the sows. The process of second-guessing their own judgments can play tricks with their minds. The point of reference is usually the previous day or the most recent chore-time. "Everything was okay yesterday so I must be imagining things" is a dangerous counter to a gut feeling that all is not well. It is a healthy exercise to lay aside our feelings from yesterday and deal with reality today. Action begins only when we concede that something is wrong.
- **Communication:** There must be a voluntary motivation to seek external confirmation and advice from other co-workers, supervisors or industry professionals. A second pair of eyes will bring clarity to a situation and nudge the producer into action. There is often a tendency to "hold the cards to their chest" and deny that outside influence may contribute a positive effect on the outcome. While there is no denying the extensive experience and sensitivity to details that an individual producer possesses, it may be a major deterrent to a partnership with other qualified voices. Humility is a personal choice that precedes the ability to pick up the phone, arrange the meeting or start the conversation that leads to a resolution!
- **Be open-minded:** Following the process of disciplining oneself to face reality and initiating communication, advice and opinions will flow freely. The producer or final decision-maker will need to filter out valid information from preconceived biases and notions. But never throw out the baby with the bathwater! The producer has the opportunity of a lifetime to be exposed to the information or research that may solve his problem and position his farm to have a profitable future. They must put to rest their petty preferences and prejudices, replace them with an open mind, and honestly evaluate the results of their research.

Troubleshooting is the greatest friend to prosperity in the business of managing a sow herd and raising their progeny. Rather than viewing the processes as a necessary evil, embrace these principles and apply them to your farm. The inefficiencies that are uncovered, the troubles that are thwarted and the diseases that are eradicated will pay you great dividends as you move forward. ■

Opportunities for Canadian pork exports

Canada Pork International (CPI), established in 1991, is the export promotion organization of the Canadian pork industry. Its top priority is market access, according to Michael Young, its Vice President, Technical Programs and Marketing Services. This is a prerequisite for promotion, differentiation initiatives and market development investments, he says. Market access cannot be taken for granted and trade disruption can happen anytime, anywhere; remember the impact of BSE and H1N1. Market access defines who is in the elite group of pork exporters - Canada, USA, Denmark - Young believes. Brazil has yet to become a major threat because of market access issues, he says. It is very important that improvements and progress continue regarding animal health, regionalization and biosecurity. He looks at the current situation for Canadian pork exports and identifies opportunities for the future.

Introduction

CPI is a joint initiative of the Canadian Meat Council, representing pork processors and trading companies, and the Canadian Pork Council, representing Canada's hog producers. CPI members include 32 allied and associate organizations, 24 processing plants, and 23 trading companies collectively representing almost 100% of Canada's pork processing industry.

CPI has four primary strategic priorities: Market Access, Market Development, Market Intelligence/Member Services, and Product Positioning/Promotion.

Trade balance

In 2011 Canada's 7,000 hog farms produced 27 million pigs based on an inventory of 11.9 million pigs and 1.3 million sows. Manitoba, Ontario and Quebec represent 79% of Canada's hog production. Canadian federal slaughter volume is distributed across Canada: Western Canada 41%, Ontario 21%, and Quebec 38%. Downsizing and market access issues with the USA (COOL) have resulted in a 25% reduction of inventory over the last few years but slaughter capacity has maintained a solid momentum.

Canada accounts for over 20% of global pork exports and is the third largest exporter behind the USA and EU. For the last five years Canada has exceeded 1 million tonnes of pork exports annually to over 130 countries and 2011 was another record breaking year for volume and value. In 2011 Canada exported over 64% of its pork production compared to beef, which declined to 38% and poultry holding at 13%.

Canada is also the most export dependent country compared to the top 9 pork exporting countries in the world. This is the result of growing exports, declining domestic consumption and increased pork imports from the USA. Pork production has been growing exponentially in Canada since 1991 and represents the largest red meat sector in the country. In 2011 1.9 million tonnes of pork was produced, ahead of beef at 1.1 million tonnes.

Canadian pork exports have also grown, tripling in volume over the last 15 years. Major growth has come from Japan and other markets outside of the USA, which is still Canada's largest export market by volume. In 2011 Canadian pork exports were worth 3.2 billion compared to 711 million in 1990.

Canadian pork quality, workmanship, carcass utilization and value optimization by Canada's meat packers and trading companies have been successful in marketing Canadian pork cuts to many countries around the world. Many of Canada's processors have been able to earn and achieve an export premium of $19.00 - $23.00/head compared to the same cuts marketed only in Canada and the USA. Canada's top value/unit export markets are Japan, Australia, New Zealand, USA, Russia, and South Korea.

CONTINUED ON PAGE 24

THE NEXT HALF-CENTURY OF PROGRESS STARTS HERE.

PIC 50 Years

1962-2012

NEVER STOP IMPROVING

Canada's domestic pork disappearance has been trending downwards for many years but not out of line with changes in many other developed countries. The most important concern is the increase in pork imports, primarily from the USA. The combination of decreasing consumption and increasing imports must be addressed in Canada. In 2011 over 26% of the pork consumed in Canada was imported, primarily from the USA. This represents a 200,000 tonne opportunity for Canadian marketers to recapture domestic market share. However in 2011 the growth in exports out-performed imports resulting in an overall increase in trade balance. Canada is the fourth largest export market by volume for the USA but the second largest in value based on the product mix that is moving north.

"In 2011 over 26% of the pork consumed in Canada was imported, primarily from the USA"

Outlook and opportunity gaps

Global consumer confidence is still a concern and is still struggling to recover from pre-recession levels. Economic power is shifting to emerging markets. Average annual GDP growth rates in emerging markets from 2011 to 2016 is predicted to be 50% higher than developed markets.

Global meat consumption trends suggest that from 2010 to 2019 pork will increase by 23%, beef by15% and chicken by17%. Three billion people in the world will be trying to move into middle class economies and will drive meat demand.

The keys to growth in 2012 are:

1. Fair and equitable market access
2. Targetting economically powerful end-user customer segments
3. Leveraging the redefinition of value, quality and emotion
4. Engaging the connected customer base in ways they understand and trust

What's driving consumer demand?

1. Quality, value, price
2. Taste, tenderness, flavour
3. Economic climate
4. Brand equity
5. Safe and wholesome
6. Nutrition
7. Variety, availability
8. Ethnic influences
9. Convenience
10. Life style choices

The Canadian pork industry faces many global marketing challenges that include the erosion of the domestic market, and continued growth and prosperity in the export marketplace.

The right product for the right market:

1. Price, value, service
2. Segment the market, identify the needs, serve them well
3. Change the "rules of the game" whenever possible

Competitive advantage:

1. Best in-class protein solution
2. Relevant and verifiable points of differentiation

Competing on price is easy, profitability is the challenge:

Value = benefits / cost:

1. Establishing a credible value proposition
2. Adding value and growth to a commodity driven category
3. Knowledge to maintain or defend price points in a competitive protein market
4. Validation and communication of relevant points of differentiation ■

Optimizing nursery productivity

In this edited extract from the paper 'Ten rules to optimize nursery-grow-finish productivity', Veterinarian Dr. Greg Wideman, of South West Ontario Veterinary Services, and Dallas Reimer and John Otten of Minor Brothers Farm Supply Ltd., examine the factors that contribute to optimum performance in the nursery. Provision of optimal resources to the newly weaned pig is important, but crucial to success is stockmanship, they say. In addition, implementation of a strict feed budget will not only maximize performance but also minimize feed costs. The authors provide their insight into the environmental, nutritional and management aspects of the nursery phase of production.

Providing optimal resources to the weaned pig

Floor space allowance

If pigs are kept in a nursery up to 25kg body weight then 2.85-3.0 ft^2 of floor space per pig is ideal. If raising pigs into the 30kg range then target at least 3.0 ft^2 and maybe closer to 3.5 ft^2. This will depend on the housing cost and the farm's measurement of improved performance of the pig. Leaving pigs in nurseries to a heavier weight can be hard on the hardware of the nursery (especially plastic flooring), but if exit weights can be managed to allow 'All-In, All-Out' pig flow, this is the best way to manage flow and segregation between groups of pigs.

Thermal environment

It should be noted that the optimal temperature for different groups of weaned pigs ranges from a low of 22.9°C to a high of 29.8°C depending on age and size. Reduction of temperature can begin 2-3 days after weaning and, three weeks into the nursery period, the temperature can be lowered slightly on a daily basis until the pigs leave the nursery. If we lower the temperature but keep the pig comfortable we will be able to provide the conditions for optimum feed intake. Many current recommendations tend to keep our nurseries slightly warmer than necessary, resulting in lowered feed intakes and poorer growth. In studies, piglets preferred cooler temperatures at night. Between 10:00 pm and 6:00 am, piglets selected

CONTINUED ON PAGE 26

temperatures that were about 3°C to 4°C lower than during the daytime. A larger daily temperature variation is undesirable.

Provide the stockmanship to give weaned pigs a good start

While environmental management and proper nutrition are critical to success in the nursery, piglet management is the most important of all. The following is an abbreviated list of key management practices to achieve success in weaned piglet management:

- The room, including all equipment, must be thoroughly cleaned and disinfected. This includes fans and blades, air inlets, feeders, penning and flooring. Any attention paid to proper cleaning is likely to pay significant dividends in piglet performance and health after placement.
- Prior to arrival, the room air and all equipment in the room should be warmed to receiving temperature. The recommended receiving temperature will depend on piglet size and initial feed intake, but an average of 28°C is a reasonable starting point. Piglet behaviour will reveal if the temperature is too high or too low.
- Adjust the feeder gate so that about 40% of the feed tray is covered with feed. Anything less than this will impair pig performance, and greater coverage provides no benefit but increases the risk of wastage.
- Check all drinkers to ensure they are functioning correctly. If nipple drinkers are used, they should be adjusted so they are at shoulder height of the smallest pig in the pen. Additional waterers are recommended for pens with smaller pigs, to ensure dehydration does not occur.
- Pigs should be placed in pens according to bodyweight; this is not to improve uniformity of growth (because it will not), but because it facilitates more effective feeding and water management. Pens of smaller piglets will probably require more attention than the pens of larger pigs.
- By about 36 hours post-weaning, piglets not eating or drinking can generally be easily identified. The management of such pigs will depend on individual units, but hand feeding, offering 'gruel', or other personal attention will reduce mortality and removals. If weaning has occurred on Thursday, unfortunately this critical time will fall on Friday night or Saturday morning, a time when labour could be in short supply. Nonetheless, this is the time when potential non-viable pigs can be turned into healthy productive animals.

> **"Diet complexity must be reduced rapidly as feed intake increases and economic benefit declines rapidly"**

Develop an optimized nursery feed budget

It is critical to practice strict discipline when using a feed budget, to prevent overfeeding of the more expensive nursery diets past the desired weight range. Often this is the cause of high feed costs in the nursery. However, limiting the intake of complex diets in the first two weeks can also affect the financial numbers.

Switch from complex to simple diets as quick as possible

Diet formulation for feeding weaned pigs should be designed with certain key considerations in mind:

- Feed intake drives growth performance.
- Complex diets with specialty ingredients are beneficial during the first few weeks after weaning because they increase feed intake.
- Diet complexity must be reduced rapidly as feed intake increases and economic benefit declines rapidly.

Feed budget

The following three weight ranges are the most typical with a fourth diet being either added or splitting up the 11-25 kg

CONTINUED ON PAGE 28


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range, depending on the number of days in the nursery and desired pig weight:

1. Weaning to 7 kg: An effective nursery feed program aims to transition pigs to a low cost, corn-soybean meal-based diet as quickly as possible after weaning, without sacrificing growth performance regardless of the number of diet phases used. This stage is where the most attention should be paid to pig weight and amount of phase to reach goals. With variance from pen to pen and week to week, both over and under feeding at this time are major contributors to poor financial outcome.
2. 7 to 11 kg: At this weight, the diet is typically a corn-soybean meal based diet with about 7% to 10% high-quality lactose and a small amount of specialty protein source, such as plasma or high-quality fishmeal. Again, if a great job of assessing the first stage is done there is limited assessment needed here. However, if variance in pig weight is observed the budget should be observed to fit the end goal and weight range.
3. 11 to 25 kg: This diet will be a simple corn-soybean meal diet with limited specialty protein products or lactose sources, resembling a grow-finish diet. The digestive capacity of pigs at this weight means that specialty products are unnecessary and including them will only increase the feed cost per pig with limited benefits. This is the lowest-cost diet in the nursery program, but since consumption is the greatest at this stage, it accounts for more than half of the total feed cost from weaning to 25 kg. Typically, 20 to 25 kg of feed is budgeted for pigs during this last phase.

Factors that can reduce the effectiveness of the feed budget

1. Weaning weight: There is a linear relationship between birth weights and weaning weights, affecting nursery production. However, most farmers only have the weaning weight so it is the most common predictor of nursery budget success. Make sure you are monitoring your weaning weights regularly to assure you are maximizing nursery performance and validating your program. If weaning weights fluctuate so should your nursery budget, to maximize your program.
2. Water and feed availability: Limiting water or feed will always affect your budget. Water will affect feed intake and is easy to measure if limiting. The best way to know if feed intake is being obstructed is to manage feeders and measure average daily feed intake. 650g per day is very attainable if the conditions are right.
3. Environment: Air quality, flow and temperature play a major role in the effectiveness of your budget. If the room is cold, efficiency will go down, and if the room is hot, efficiency will go down. Environment must be assessed daily to assure the optimum is achievable.
4. Management: Dealing with pigs that need extra care and assessing disease are crucial to knowing if the budget is going to fail or succeed. The faster we can get on this the better chance we have of reaching our nursery budget goals.
5. Measuring: Once water, feed allowance, management and environment are assessed, measuring is going to be the key to objectively following a budget. In many cases early diets are very easy to manage due to the low amounts needed. Weaning weight is probably the largest indicator of success in the nursery. This means that we should be always assessing our budget relative to weaning weight. Ideally, each phase should be monitored to ensure weight ranges are being achieved. If not, every crop or room can be measured, then make sure you get some quarterly numbers or verify your data every time a change is made to medications and ingredients.

If simple measurements such as weight in, weight out, average daily gain, feed conversion and cost per kg of gain are not regularly being assessed, there is no real way of knowing if your budget is working. Nursery programs can vary by $5 per pig and go unnoticed. Unless you combine measurements with management, feed, water and environment, they all can be fairly limiting in what they tell you. ■

The impact of lameness on sow productivity

Lameness in sows and gilts can have a large impact on cost and efficiency of production and the consequences are larger than most producers are aware. This disease is like a stealthy thief, says Dr. Mark Wilson of Zinpro Corporation, Eden Prairie, MN, because losses often go unnoticed or recognized. Lameness is one of the major reasons for culling in gilts and sows, he notes, pointing out that there are several causes of lameness such as arthritis, osteochondrosis, disease and claw lesions. Wilson focuses on claw lesions as a cause of lameness. These become problematic when the lesions are severe enough that they penetrate the horn wall into the corium - the deep inner layer of the skin, under the horn of the hoof. This causes inflammation and pain, which impacts productivity. Wilson examines the effects of lameness on reproductive performance and suggests ways of reducing the incidence of the problem.

A 2007 survey estimated that lameness accounts for 15% of the gilts and sows that are culled. "This number is likely underestimated because animals that are culled for reproductive reasons and for age are also often lame," comments Wilson. "Besides concerns for welfare of the animals, culling due to lameness impacts herd dynamics and reduces productivity."

Often losses or removal due to lameness occur in gilts and first parity sows. "Generally, the value of herd replacement gilts is not paid for until they have had at least three litters," Wilson notes. "Each additional litter that a sow has above the third litter dramatically reduces the fixed cost of piglet production." Improving longevity through the prevention of claw lesions will have a large economic impact on the production system, he says. Increasing the number of sows in parity 3-6 has a large impact on overall productivity of the herd. He believes that the most important aspect is to attend to the management issues - primarily feeding and nutrition - that help prevent claw lesions and lameness, thus improving longevity. As replacement rates are reduced, herds become immunologically more stable and productivity improves, he says.

> **"The presence of non-cycling ovaries was the most common (9% of sows) problem found in the reproductive tracts of cull sows"**

Lameness not only increases the likelihood of early removal from the herd but also research shows that it causes a highly significant reduction in sow productivity. "One of the obvious consequences of lameness is pain and inflammation causing a reduction of feed intake," says

CONTINUED ON PAGE 30

Feeding and management to help prevent claw lesions and lameness should begin early in the development and selection of gilts, says Dr. Mark Wilson.

Wilson. "If a younger parity sow does not eat well they generally have reduced reproductive performance. There is a direct relationship between daily feed intake during lactation and the time taken for sows to express oestrus after weaning." Longer weaning to oestrus intervals are associated with poorer farrowing rate and lower litter size in the subsequent parity. He stresses the importance of achieving a high lactation feed intake in young females and suggests that prevention and early treatment of lameness and claw injuries will help maintain appetite and feed consumption.

Many of the claw lesions and injuries found in sows are inflammatory type wounds. Wilson points out that the mechanisms that result in these lameness and foot injuries impacting reproduction are similar to those involved when there is a lack of nutrients. "Is it any wonder that we see more sows abort or absorb embryos, decreased litter sizes born and a lack of return to oestrus when sows are severely lame?" he asks.

The presence of non-cycling ovaries was the most common (9% of sows) problem found in the reproductive tracts of cull sows during a 2007 survey. The incidence of this problem increased as sow body condition decreased and was also correlated with rear foot abscesses. However, Wilson notes, not all sows with claw lesions will exhibit changes in appetite and feed consumption. The injury must be inflammatory to see these responses.

Many aspects of nutrition impact claw health, including energy, protein, macro minerals, trace minerals and vitamins. Feeding organic minerals in an amino acid complex has been shown to improve feet lesion scores, milk production and reproductive performance in dairy cattle. Although further research is needed in sows, some trials suggest that nutrition may play an important role in supporting the immune system and improving lameness and reproductive performance. "When the minerals Zinc, Manganese and Copper were provided in the diet as an amino acid complex in a controlled experiment, results showed a decrease in claw lesions of sows housed in gestation crates, compared to those fed the same mineral levels as sulphates," Wilson explains. "The results indicated that the sows fed trace minerals as amino acid complexes had significantly less lesions on the hind limbs than control sows." Also, analysis on the prevalence of lameness indicated that it was lower for the sows fed trace mineral amino acid complexes (34% vs. 51%) compared to sows fed inorganic trace minerals. When reproductive performance was evaluated, the treated sows had more pigs born alive (11.07 vs. 10.44) and litter birth weight also tended to be higher (16.99 vs. 16.16kg.)

Claw health is crucial to the overall well-being of the sow, Wilson concludes. "Claw lesions that penetrate the corium - the deep inner layer of the skin, under the horn of the hoof - increase the potential for inflammatory response and are associated with pain, lameness and decreased productivity," he points out. "Because lameness and reproductive failure are two of the most prominent reasons for early removal from the sow herd, feeding and management to help prevent claw lesions and lameness should begin early in the development and selection of gilts." ■

Why benchmarking is important

The Canadian pork industry has to compete in a global marketplace, so it is becoming increasingly important to ensure that you remain competitive in both economic and production efficiencies, says Rob McDougall, of Paragon Farms, Thamesford, Ontario. Benchmarking is a tool which enables comparison of key efficiency measurements with other businesses in the same industry. Benchmarking is simply measuring a company's data to improve performance, McDougall notes. It is used successfully in numerous industries, sports teams, countries and even in our personal lives. He outlines some important aspects of benchmarking a hog production business and provides guidelines on how to get the best results from implementing a benchmarking program.

The purpose of benchmarking

The purpose and goals for benchmarking will be varied and unique amongst different companies:

1. Benchmarking is used to determine your current level of biological or financial efficiencies vs. your industry peers.
2. There is little point in benchmarking minor activities within your business, focus on the key areas of your business.
3. From this information and comparative data you will be able to accurately determine your company's strengths and opportunities for improvement.
4. Benchmarking can be used to compare genetic performance levels for a maternal or terminal breeding program.
5. It can be be used for employee and contract grower performance evaluations.
6. Benchmarking can provide information and a better level of understanding to your lender in regards to your performance vs. others within the industry.
7. There are internal and external benchmarks.
   a. Internal
      - System analysis
      - Identified key drivers
   b. External
      - Your performance vs. peer group
      - Canadian vs. United States
      - North American vs. global

Practical uses of benchmarking

Benchmarking can provide a better understanding and awareness of your own operation's strengths and opportunities

for improvement. This better understanding enables owners and employees to focus on identified areas of opportunities linked to company objectives:

1. A focus on identified opportunities with employees enables the entire group to ensure resources are in place for improvement.
2. Benchmarking provides a clear measurement of the key drivers that are important to the operation's overall performance. These could include kilos of pork sold per sow, pigs per sow, cost per kilo of gain, mortality rates, ADG, labour cost, cost per pig weaned, etc.
3. It provides a better understanding of your system's biological and financial performance to evaluate your operation's long term sustainability and growth potential.
4. There can be valuable relationships built within a benchmarking group that works together and compares data. Through these relationships there is the potential to share knowledge, experience, understanding and awareness of key industry issues which can prove to be very beneficial.

Limitations of benchmarking

There are concerns and limitations with benchmarking that need to be factored into the decision to use a benchmarking exercise to improve overall performance.

1. Benchmarking is a process that needs a commitment to the program to succeed.
2. There must be clear and defined parameters that are used in the benchmarking process. It is imperative that key parameters are measured in the same manner and you must ensure that "apples to apples" comparisons are used.
3. There must be a commitment internally to the benchmarking process that will include both the time involvement and the cost of the exercise.
4. Benchmarking must be treated as an ongoing continual improvement process and not as a one-off project.

Conclusions

Benchmarking is a very useful tool to identify the strengths and opportunities within your operation as well as measuring progress and trends on a regular basis. This exercise should include production, cost and financial performance to provide the most benefit to the participant.

1. Benchmarking is not an exercise in imitation. It yields data, not solutions.
2. Keep things simple.
3. It is important to have standard definitions and measurements.
4. Benchmarking should be linked to your company's objectives.
5. There is a benefit from the relationships and knowledge that can be gained from your peer group.

Benchmarking is not a one-off activity. Even if you have achieved best practice today, regular benchmarking is essential to keep you up to date and ahead of the competition. ■

Large group auto-sort systems for finishing pigs

Large group auto-sort (LGAS) systems for grow-finish pigs have become more popular over the last 5-8 years, due to their ability to automatically select pigs for market accurately. This not only saves labour, but reduces stress on the pigs. Large pens are also cheaper to build than conventional finishing pens with 20-25 pigs. However, the layout of the pen, especially the arrangement of the feed court area is critical to success. In addition, management of the system, especially the training of pigs to use the scale and feed court, can have a big impact on the success, or otherwise, of this method. According to Marvin Wastell, with Gro Master, Inc., Omaha, Nebraska, over the last eight years many US swine producers have removed their auto sorters for a variety of reasons, such as reduced growth rate, pigs dying in the food courts and poorly designed buildings and food court layouts. Failure to change management procedures and lack of after-sale support by the distributor and manufacturer have also been contributing factors, he says. He looks at some of the factors involved in making LGAS successful and reviews the results achieved by producers using the system.

Key points about auto-sort systems

In December 2005 a group of swine producers from 5 different countries, together with several scientists, met in Northwest Iowa to discuss raising pork in large pens utilizing auto-sorters. The producers learned that there is an economic improvement potential of up to16 US dollars per pig marketed by raising pigs in large pens with auto-sorters. Since December 2005, these producers and others have learned the following about raising pigs in large pens with auto-sorters:

- Large pen auto-sort is **not** for every producer
- Preplanning is a must
- The system must be designed for pig flow and people
- Training of pigs and **people** is a must – there is a learning period
- Change of management procedures is required
- Surge protection for the electronics and the communication system is a must
- Direct communication with the manufacturer is highly advantageous
- It requires a commitment from the producer, employees managing the barns, distributor, and the manufacturer
- The sorter structure and one way gates must be durable and pig and people friendly
- After installation, good service and support are a must
- The software must provide real-time, accurate, usable reports.

CONTINUED ON PAGE 36

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[1] Patience, J. et al. 2006. "Effect of Ractopamine in Finishing Swine Diets on Growth Performance, Carcass Measurements and Pork Quality." Prairie Swine Centre Inc. Data on file.

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Performance in auto-sort systems

The number one question being asked since the introduction of LGAS is whether pigs will gain and convert feed to pork as efficiently as pigs raised in small pens of 25 to 30 animals. Blue Marsh Hog Farm of Plum Coulee, Manitoba conducted a test comparing performance of pigs raised in small pens with pigs raised in large pens with auto sorters. Table 1 provides a summary of their findings.

Blue Marsh Farms found that pigs raised in large pens with auto sort do gain and convert feed to gain as well as pigs raised in small pens. In addition the labour cost for sorting was significantly reduced.

> **"The producer realized an $8.91 advantage per pig marketed from the use of the large group auto-sort system"**

A South Dakota producer conducted a similar trial, which showed 0.04 kg less daily gain but 0.18 percent better feed conversion and $5.44 per head better carcass premium. Production cost was $1.31 less. The producer realized an $8.91 advantage per pig marketed from the use of the large group auto-sort system.

An Iowa producer compared iso-wean pigs raised in large pens (150+ pigs for 6 weeks and 600 plus pigs per pen thereafter) with pigs raised in large pens (660 pigs) with auto-sort. The results of 4 replications showed that pigs raised in pens with the auto-sort had slightly better gains, with feed conversion improved by 0.18 and US $1.98 lower feed cost. In addition, the producer received US $5.50 more revenue per pig sold. The improved carcass revenue plus the decrease feed cost resulted in US $7.98/pig improved revenue for pigs raised in the LGAS system. The return on investment was US $10,534 per year with a payback period of 18 months.

Table 1: Blue Marsh Hog Farm, Plum Coulee, Manitoba: Large group auto-sort (LGAS) vs. small pen (SP, 20 pigs/pen)

	LGAS	SP
Number of pigs	552	574
Average daily gain, kg	1.06	0.98
Feed conversion	2.59	2.64
Man hours for marketing	2.7	32
Labour cost for marketing, per pig	$0.10	$1.22

How many pigs per sorter?

A second question that is frequently asked is how many pigs can be sorted by a given sorter. To answer this question, one must define the type of sorting system that is employed. There are auto-sort systems that are primarily used to sort market pigs. One manufacturer advocates 1000 to 1400 pigs per sorter by alternating pens of pigs being sorted. To date, there are varied reports from producers regarding the success of this system.

Two Manitoba producers, Rock Lake and Starlite Colonies, have been monitoring the growth performance of pigs housed in different size pens and sorted into three different food courts several times daily. Their findings are shown in Table 2. To date these producers have not found a performance difference in pigs housed in pens of 300 to 600 pigs that are sorted daily.

Food court design can have an effect on pig growth. A Saskatchewan producer found that pigs increased their number of times passing through a sorter three-fold and had 0.16 kg increased average daily gain by changing the design of his food court .

A South Dakota producer found 0.05 kg increased daily gains by revising the design of his food courts.

Table 2: Effect of number of pigs/sorter on daily gain

	Group		
	1	2	3
Starlite Colony - 1 rep			
Number pigs/sorter	300	425	536
Average daily gain, kg	1.08	1.00	1.07
Rock Lake Colony - 3 reps			
Number pigs/sorter	306	605	
Average daily gain, kg	0.94	0.95	

Other factors to consider

High ingredient prices today are stimulating swine producers to utilize a targeted weight feeding program with their auto-sort system. Kansas State University reported a feed savings of US $1.29 per pig marketed by specifically formulating and feeding diets for light and heavy pigs within a group. Using October 2007 ingredient prices, the cost differential between diets formulated for light, medium, and heavy pigs with an average weight of 99lbs (45kg) was US $33/ton. Feeding the appropriate diet according to weight of pig not only saves feed cost but improves pig growth.

A Minnesota producer in 2011 wanted to know if increasing the number of pigs per given barn by 10% would affect his pig performance. His barn was designed with four auto sort pens, with 625 pigs per pen and a stocking rate of 0.7m^2 per pig. In his trial, he increased the number of pigs per pen to 686 pigs with a stocking rate of 0.62m^2 per pig. He compared the performance of the pigs raised in the auto-sort pens with pigs raised in conventional small pens that were marketed at the same time. He reported that pigs in the large group auto-sort pen had a 0.08 kg greater ADG than pigs raised in conventional pens.

Conclusions

In summary, large pen auto sort is a fresh way of utilizing technology with significant benefits. It allows for targeted marketing; it enables producers to optimize facility use; it ensures animal welfare; it permits producers to monitor real time animal performance and it provides the capability to administer targeted feeding programs and reduce feed costs. ■

Promoting our passion for pork

PASSION FOR PORK™

It has been said that nothing great in this world was accomplished without passion, something the Alberta pork industry knows only too well. It's passion that drives producers to invest the necessary time, energy and money to achieve success, while constantly striving for improvement.

But passion is like a fine pork tenderloin or glazed ham: It's meant to be shared. With that in mind, Alberta Pork launched an ambitious campaign on May 23 to promote Alberta-grown pork as one of the highest quality meats in the world.

The new program, called Passion for Pork™, is a collaborative effort involving Alberta producers and chefs from dozens of restaurants in Western Canada to share their affinity for pork through inventive, creative and delicious recipes. The chefs will post videos of their recipes on passionforpork.com, along with other family favorite recipes and loads of information about cooking with pork.

> **"Please visit passionforpork.com and send us your best pork recipe and a family photo if possible"**

Alberta Pork Executive Director Darcy Fitzgerald has been actively promoting the campaign through newspaper and radio interviews and relaying an important message to consumers. "Alberta pork producers maintain the highest standards of food safety and animal care in a sustainable environment," says Fitzgerald. "Our smaller farm numbers, vast land mass and climate, along with high quality grains, contribute to a superior, healthy pork product."

"We are very excited to be working with our restaurant partners who share the passion for quality pork products that are both delicious and healthy," says Fitzgerald. "We hope consumers will visit the passionforpork.com website and the restaurants to share the passion for pork. This summer let your taste buds have some fun."

The campaign, which kicked off on May 23, will run television and prints ads as well as monthly contests for consumers and producers to enter their best pork recipes. "We also plan to feature a Producer Recipe of the Month," noted Fitzgerald. "Please visit passionforpork.com and send us your best pork recipe and a family photo if possible. This campaign is all about passion, so we encourage producers to get involved, share their passion, and help spread the word about the wonders of Alberta-grown pork."

Chef Heather Dosman of Edmonton's Culina Muttart and her Bulgogi braised pork. The recipe is available at passionforpork.com

This pilot consumer awareness and marketing project is being supported by the Alberta Livestock and Meat Agency (ALMA). "Without that support, this groundbreaking initiative simply would not have been possible," stresses Fitzgerald.

For more information about Passion for Pork™ contact Darcy Fitzgerald at darcy.fitzgerald@albertapork.com or phone 780-491-3529. ■

The nutritional value of green canola seed fed to growing-finishing pigs

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Take home message

The high cost of conventional feedstuffs has increased the need for inclusion of alternative feedstuffs into swine diets. Green canola seed (GCS) contains more digestible and net energy than wheat and corn, which are the conventional sources of energy in swine diets. GCS is also a fairly good source of standardized ileal digestible (SID) amino acids. Hence, it might be an alternative feedstuff to consider for feed formulation, although glucosinolates in GCS could be considered a risk. In a commercial-scale study, inclusion of 0 to 15% GCS in diets for grower finisher pigs formulated to equal net energy and SID amino acids did not affect growth rate, backfat thickness and carcass leanness; but slightly decreased carcass weight (0.06 kg per 1% inclusion of GCS). Thus, inclusion levels of GCS in swine diets should be based on desired carcass weight or pigs fed GCS should be marketed heavier. Depending on feedstuff prices, GCS might be an attractive feedstuff for swine.

Introduction

Prices of conventional feedstuffs that serve as sources of energy and protein in swine diets in Canada have been increasing. Thus, a need exists to determine the nutritive value of non-traditional feedstuffs that could be used as alternatives to the conventional sources of energy and protein in swine diets in Canada and one such alternative is GCS.

Green canola seed is seed that does not properly mature prior to harvest and cannot be used by canola crushing plants to produce human-grade canola oil; hence, GCS is available as feedstuff in Canada. GCS is rich in energy due to its high oil content and is also a good source of protein. Therefore, it has potential to serve as an alternative to conventional sources of energy and protein in swine diets.

CONTINUED ON PAGE 40

Information on the nutritive value of the GCS fed to pigs is lacking. A study was recently conducted to determine the digestible energy, net energy and SID amino acid content of GCS fed to pigs and to determine the effects of increasing inclusion of GCS from 0 to 15% in diets for growing-finishing pigs on growth performance and carcass characteristics.

Nutrient profile

The GCS in the present study was obtained from a crop producer in Alberta. It was graded by Canadian Grain Commission (Winnipeg, MB) to be 60% distinctly green (Figure 1). The content of crude protein, ether extract, lysine, methionine, threonine, and tryptophan in GCS was 24.9, 43.1, 1.34, 0.49, 0.91 and 0.27% (dry matter basis), respectively.

The GCS was fed to ileal-cannulated grower-finisher pigs at the Swine Research and Technology Centre of the University of Alberta to measure amino acid and energy digestibility. The content of SID amino acids and digestible and net energy was calculated. Apparent total tract digestibility of energy was 75% and the content of digestible and net energy was 5.22 and 3.71 Mcal/kg (in dry matter), respectively. The content of SID lysine, methionine, threonine and tryptophan was 1.16, 0.42, 0.70, and 0.23%, respectively. Combined, these results indicate that the GCS contains more energy than the conventional sources of energy in swine diets such as wheat and corn due to its high oil content. Its content of digestible amino acid is slightly lower than that of conventional sources of protein in swine diets such as soybean meal and canola meal.

Figure 1: Picture of the green canola seed used in the present study with 60% of the seed being distinctly green (courtesy of Canadian Grain Commission, Winnipeg, MB)

Feeding trial

A commercial feeding trial was conducted to determine the impact of feeding increasing levels of GCS on the performance of grower-finisher pigs. The trial was conducted at the Drumloche Farms facility near Irma, Alberta.

> **"Overall, increasing the inclusion of green canola seed in diets did not affect feed intake"**

In total, 880 pigs (25 kg body weight) housed in 40 pens with 22 pigs per pen were fed 4 dietary regimes with 0, 5, 10, and 15% GCS. The feed was distributed using an automated feeding system. The 4 diets were formulated to equal SID lysine:net energy content during 5 growth phases (g/Mcal; phase 1, days 0 to 21, 3.99; phase 2, days 22 to 42, 3.61; phase 3, days 43 to 62, 3.25; phase 4, days 63 to 74, 2.88; and phase 5, days 75 to 97, 2.65). The diets contained wheat, barley, wheat DDGS, soybean meal and field pea or lentil as the other ingredients. Increasing GCS allowed for the partial replacement of wheat by barley and gradual removal of tallow to maintain energy content and for the gradual removal of soybean meal as the main amino acid content. Phytase was included in all diets.

Overall, increasing the inclusion of GCS in diets did not affect feed intake (Figure 2). Feed intake of pigs fed diets with 0 and 15% GCS was 2.63 and 2.66 kg/day, respectively. Also, increasing the inclusion of GCS in diets did not affect overall growth rate, which for diets with 0 and 15% GCS was 1.008 and 0.992 kg/day, respectively. However, increasing the dietary inclusion of GCS from 0 to 15% decreased overall feed efficiency from 0.384 to 0.373 kg/kg, equivalent to increasing feed conversion from 2.609 to 2.681.

Increasing the dietary inclusion of GCS from 0 to 15% decreased carcass weight and dressing percentage from 96.7 to

CONTINUED ON PAGE 42