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Seminar 2012**



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Cover Photo

On track at Banff: The Banff Pork Seminar tackled the global issue of "Feeding tomorrow's world" this year



Weaning management

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**Western
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Banff Pork Seminar 2012 Preface

The last few years have seen a growing realization that the era of cheap food, which has reigned for 50 years, is now over. Record prices for corn in 2011, combined with low global stocks, a situation partly fuelled by the demand for ethanol production, led to heightened interest in the issue of food security and how we will feed the people of the world in future. It was appropriate then that the theme of this year's Banff Pork Seminar was "Feeding Tomorrow's World".

Jeff Simmons, President of Elanco Animal Health, argued passionately that the only way we will be able to feed a growing population is by the use of technology, a route which the majority of people support. He inspired his audience by saying that whereas working in agriculture has not been seen as an attractive occupation in the past, in future, being involved in food production will be a very exciting place to be. In the same session, Greg BeVier from the Bill and Melinda Gates Foundation explained how nearly \$100 million is being spent each year on livestock initiatives around the world aimed at increasing productivity and taking people out of poverty.

The breakout sessions included a wide range of topics covering nutrition, the growing science of genomics, staff recruitment, animal welfare, farrowing and nursery management, risk management and reducing feed costs, many of which are summarized in this issue.

The original versions of the papers presented at the seminar are available in the full proceedings, *Advances in Pork Production*, Volume 23. To order a copy, call the Banff Seminar office on 780-492-3651, fax 780-492-9130 or e-mail info@banffpork.ca.

I would like to acknowledge and thank those people that have helped me with summarizing the presentations for this issue: Geoff Geddes of Alberta Pork and Marvin Salomons. Also, thanks to Terry Hockaday and his team at Meristem Land and Science for assistance with editorial and photographs. ■

Bonnie Peck

Chairman's Message



The 41st Banff Pork Seminar was held at the Banff Centre in January. 660 producers and industry partners from across Canada, the US and other parts of the world assembled to hear local and internationally renowned speakers talk about 'Feeding Tomorrow's World', our theme. The key to any successful event such as this is the support shown by industry partners to assemble in one location, start new friendships and business relationships, learn and share ideas with our presenters and colleagues in the industry.

Going from feeding the current 7 billion people in the world to feeding a projected 9 billion by 2050 with the vast majority of the food coming from 5 or 6

primary producing countries could be a major challenge:

1. Approximately 10% of the world's land mass is arable today and this is not expected to grow.
2. We're currently using about 70% of the world's fresh water supply.
3. Food for fuel policies around the world would have to be dramatically changed if not eliminated.

Pork industry prosperity hinges on growth in pork demand from sources that can afford to pay for it. We must continue to strive to get more out of every unit of input and do it at a lower cost than competitors in order to achieve world competitiveness and prosperity.

While it has been a relief to finally see some positive margins in pork production over the last several months, we still have some major challenges to overcome so that our industry can stabilize and actually grow again. The challenge of creating consistent profitability through collaboration with other industry partners is the key to:


- Allowing the rebuilding and possible expansion of our current infrastructure,

- Providing key lenders the encouragement to support our next generation producers and investors and
- Increasing overall productivity and therefore improving processing plant efficiency

The Banff Pork Seminar would not be able to attract world class presenters without the excellent support of our sponsors, attendees, our advisory committee members from across Canada and conference organizers headed by Ruth Ball who keep the event running smoothly.


Lastly, I would like to thank the Western Hog Journal and other media for their coverage of this year's Banff Pork Seminar. This support provides an opportunity to share the information presented at the seminar with those who were unable to attend. I'm sure you'll enjoy reading about the new innovations, management ideas and successes in this issue.

Jim Haggins,
Chair, BPS Advisory Committee




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JSR purchases 650-sow unit from PSC

British swine breeding company JSR Genetics has purchased a 650-sow farrow to finish barn from the Prairie Swine Centre. Located at Elstow, Saskatchewan, the barn is now a nucleus unit producing JSR GP1 and GP2 female lines and Geneconverter 500 and Geneconverter 700 sire lines. Production is well underway and the company says it is achieving good production data.

“Animals were taken from JSR nucleus units both in the UK and abroad to ensure that customers and world partners will receive the same genetics from any one of JSR’s nucleus units,” says the company.

“The Elstow nucleus will remain connected to the UK and other nucleus units around

the world, by the company’s bespoke software JSR SELECT,” explains a JSR news release. “This ensures that customers and world partners will receive the same genetics from any of its nucleus units.”

The Elstow unit is an excellent facility with some rather unique attributes, not least the interactive viewing gallery which allows customers to see inside the unit without entering. The gallery has a one way airflow system from the pigs to the outside, which ensures JSR maintains optimum high health of its stock.

Swine Breeding Management Workshop

The University of Alberta’s 2012 Swine Breeding Management Workshop has the theme “Productivity and longevity of the breeding herd” and is being held on May 2nd and 3rd. Topics include ‘Cost of non-productive days’, ‘Impact of the boar on herd fertility’, ‘Nursery management and sow longevity’ and ‘Sow lameness prevention’. The workshop is being held at

the JG O’Donoghue Building in Edmonton, with practical sessions at the Swine Research and Technology Centre. The registration fee is \$250 and further information is available at www.sbmwuofa.com or from Tracy Gartner at 780-248-1159 or by email to tracy.gartner@ualberta.ca.

George Foxcroft Honorary Lectureship announced



The Banff Pork Seminar and the University of Alberta are honouring one of their own. They have announced the George Foxcroft Honorary

Lectureship in Swine Production research.

Foxcroft has been a long-time player with both organizations. A well known swine researcher at the University, he started as program director at Banff Pork Seminar in 1989 and continued until 1998.

In that time he made several major changes to the seminar that have helped anchor its success today. He started printing the “Advances in Pork Production” proceedings that added a new level of value to those attending and have become a valuable resource to the industry. He moved the management of the Seminar into the University of Alberta animal science department. He also started the BPS advisory committee which brought industry people into what had been a largely science and government dominated group. That addition opened the door to new opportunities and new sponsorship support.

The new lectureship will allow the Banff Pork Seminar to host high profile research speakers with a goal of increasing production efficiency.

CONTINUED ON PAGE 10

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H@ms Marketing Services to rebate marketing fees

From Farmscape.ca files

H@ms Marketing Services will be rebating 80 percent of the marketing fees paid

by its member pork producers during 2011. The producer owned cooperative provides pork producers in Manitoba and Saskatchewan with a range of services including marketing into the cash market, risk management services for hogs and feed, price insurance and in-transit insurance.

General Manager Perry Mohr says producers who marketed through the co-op last year will get back 40 cents per hog marketed. "The total amount involved is 575 thousand dollars," he notes.

"Now our marketing fee is set at 50 cents per hog so, as a result of the 40 being rebated, we're actually rebating 80 percent of the marketing fee to the producers."

Mohr points out that the cooperative has rebated in excess of three million dollars to the hog producers that have done business with it. He says that last year producers paid 10 cents per hog to market through the co-op. "You won't find any other business, especially in the hog industry, that's operating on such a low margin."

Pro-Ag Products announces marketing alliance

Winnipeg-based Pro-Ag Products Ltd. (PAP) and Micronutrients, headquartered in Indianapolis, Indiana, have formed a strategic marketing and distribution alliance for the Canadian livestock market. Pro-Ag Products Ltd will distribute Micronutrients' IntelliBond C copper product to the Canadian feed industry.

"Together, our companies are able to offer a broader range of products and improved mineral technologies along with technical support that will benefit our customers," says Norm Paisley, President of PAP.

"This strategic alliance builds on our commitment to the livestock and poultry industry and will ensure we deliver on our goal to develop mineral programs that enhance animal productivity in a cost effective, safe and healthy manner while respecting the environment," says Pat James, CEO of Micronutrients.

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New antipyretic fights fever fast

Champion Alstoe Animal Health has launched a new antipyretic for pigs which is specifically indicated for treating fever associated with respiratory disease. Pracetam is a soluble paracetamol, known as acetaminophen in North America, the same compound used in Tylenol, so it is well proven in humans.



Trials show that Pracetam reduces fever rapidly after treatment and reduces body temperature significantly. "It is the fever that causes loss of appetite and growth, which is very costly," explains Champion Alstoe's Don Bridge. "The treatment more than pays for itself because treated pigs eat more and grow faster than untreated pigs."

Pracetam is absorbed very rapidly and is administered using a water medicator, although it can also be given

to individual pigs with an oral doser. Not only is it rapidly absorbed by the pig and has good gastric tolerance, but the diluted product is highly stable so it remains potent for a long time.

Pracetam is available in 5-litre containers for dilution with water. For more information, speak to your veterinarian or contact Don Bridge at 1-800-456-5758, or email service@championalstoe.com.

Ethanol policy impacts livestock and meat industries

Canadian ethanol policy has directly impacted Canadian grain markets and users of grain, such as the Canadian livestock and meat industry, according to a recently released study by the George Morris Centre. While there are many factors that influence grain and livestock prices, Canadian ethanol policies also have a direct and important negative influence on the Canadian livestock industry, it says.

"Canadian federal and provincial governments have developed policies for biofuels as part of a green fuels strategy to reduce petroleum fuel consumption and associated emissions," explains the report. "The Canadian ethanol industry has been created and supported by federal and provincial subsidies, grants and mandated usage of the product in gasoline. As a consequence, it creates a subsidized competitor for Canadian feed grains that form the basis of Canada's export-based livestock and meat industry."

"As biofuel policy evolves it is important that governments and industry understand these implications on livestock and meat development"

The study found the following:

- Canadian ethanol production increases the price of feed grains in eastern and western Canada

by about \$15-20/tonne and \$5-10/tonne respectively.

- Canadian ethanol production results in a reduction in livestock feeding margins and/or increased losses for Canadian producers amounting to about \$130 million per year.
- Expanded use of ethanol to a 10% mandate will result in a serious reduction in feed availability in eastern Canada. This will result in a dramatic reduction of cattle and hog feeding in eastern Canada.

"The bottom line is that federal and provincial ethanol policy has resulted in reduced incentives for livestock production in Canada," notes the report. "Expansion of the ethanol industry in Canada will amplify the negative consequences. As biofuel policy evolves it is important

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that governments and industry understand these implications on livestock and meat development.”

“Government has demonstrated that in a short time, it can create a large ethanol industry,” points out the report. “The same cannot be said for the livestock and meat industry. Governments must realize that the red meat industry developed over a long period of time; if it were to drastically decline, it would take a very long time to return.”

The complete GMC report, “Impact of Canadian Ethanol Policy on Canada’s Livestock and Meat Industry 2012” is available on the home

page of the George Morris Centre website at: www.georgemorris.org

Nutrigenomics set to change animal agriculture

The science of nutrigenomics is set to change the face of animal agriculture, according to Jim Bannerman, National Account Manager with Alltech Animal Health. Speaking at the company’s North American Lecture Tour in Red Deer, Alberta, he said that while genetics had accounted for 85% of the improvement in livestock performance over the last 40 years, nutrition had not kept pace, so there is a lot of latent potential.

“Nutrigenomics is the study of relationships between diet, gene function and health,”

he explains. “It looks at how nutrition impacts genetic expression.” It is possible, he says, to ‘turn on’ genes to bridge the gap between genetic potential and nutrition, by feeding special diets at critical points in the animals’ life, usually when it is very young. “A conditioning diet is fed for only a day or two, but will improve meat quality, cooking characteristics and drip loss during cooking, as well as growth rate and feed efficiency,” Bannerman notes.

“It is of more value where producers are selling to the end market and can capitalize on the eating quality benefits”

The Alltech Angus program uses this technology and now has 75,000 cattle on feed, according to Bannerman. “The beef is tenderer, it’s tastier and has lower fat,” Bannerman says. “Also, cattle take 30 days less to reach market weight and there is no additional cost for the producer.”

Alltech’s Programmed Nutrition program delivers the technology to the livestock industry and is now being used by both beef and chicken producers, with research on pigs just having been started. “It is of more value where producers are selling to the end market and can capitalize on the eating quality benefits, rather than those selling in the open market,” comments Bannerman.”

Canadian Pork Council elects new chair

Jean-Guy Vincent was recently elected the chair of the Canadian Pork Council (CPC). A hog producer from Sainte-Séraphine, Quebec, Vincent expressed his gratitude for being chosen to represent the industry, a sector which in 2010, accounted for over \$3.3 billion in farm cash receipts. “The Canadian hog industry is a vital contributor to the country’s economy. I am honoured to have been chosen to help shape the future of our industry, and look forward to

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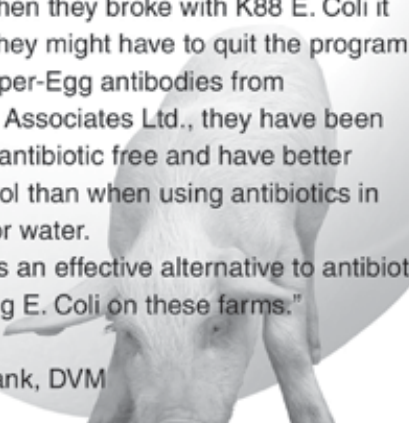
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working with my colleagues to address the many challenges and opportunities we will meet over the next year," he says.

The key challenges for the industry are the value of the Canadian dollar, availability

of feed grain, consumer preferences, the trade environment and the uncertainty that comes with the future.

Vincent, a representative of the Fédération des Producteurs de Porcs du Québec (FPPQ), is joined by two other newly elected executive officers, consisting of 1st Vice-President Rick Bergmann from Manitoba Pork Council

and 2nd Vice-President Florian Possberg from Saskatchewan Pork.

Key appointments at TOPIGS Canada



Fred Coykendall

TOPIGS Canada has announced that Fred Coykendall has joined its staff as Business Development Representative. Fred is currently based in central Alberta. In his new role, he will develop sales and provide customer support in Alberta and Montana.

Fred is well known to the Alberta swine industry and brings with him years of experience. Having been a sales representative for a large feed company and a swine genetics company, he also has considerable experience in the meat processing industry. Fred Coykendall may be reached by calling (780) 878-5122 or by email at fcoykendall@topigs.ca

Gordon Edwards has been appointed as Ontario Sales Manager for TOPIGS. He will assume a management role within Ontario but will also continue to sell and service TOPIGS products in the province. Having worked in many levels of the industry including production, sales and marketing, Gordon is no stranger to the Ontario swine industry. The many years of involvement with producers, veterinarians and organizations across the province make him a well-recognized individual. He may be reached by calling (519) 440-8128 or by email at gedwards@topigs.ca. ■



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FX Aherne Prize Winners

Innovators honoured at Banff Pork Seminar

Contributed by Banff Pork Seminar

Three Canadian pork industry innovators were presented with awards for their accomplishments at the 2012 Banff Pork Seminar.

The winners of this year's FX Aherne Prize for Innovative Pork Production include Garrett Gerbrandt of the Puratone Corporation in Niverville, Man.; Dale Heptonstall of Sunterra Farms in Acme, Alta.; and Mary Haugh and Peter Jones of LMR Inc. in Listowel, Ont.

"All successful industries are built on the ability to innovate," says Dr. Michael Dyck of the University of Alberta, chair of the FX Aherne prize committee. "The innovations developed by each of this year's award winners are all

very significant contributions to the pork production industry and are all deserving winners."

The FX Aherne Prize for Innovative Pork Production is an opportunity for the industry to recognize those individuals who have developed either original solutions to pork production challenges or creative uses of known technology. They are named after the late Dr. Frank Aherne, a professor of swine nutrition and production at the University of Alberta in Edmonton and a major force for science-based progress in the western Canadian pork industry.

"The legacy of Dr. Aherne was innovation," says Dyck. "These awards in his name are an important

recognition of those who fit the spirit of his innovative thinking and the service to the industry that he represented."

Gerbrandt received the award for his invention of unique, livestock-friendly loading plates for finishing farms, which are used throughout the Puratone corporate farm system. The loading plates are designed to lessen the stress of loading market hogs to ship to the packer. They are designed to swing out towards the loading ramp to funnel the hogs through the loading ramp. This avoids piling up caused by pigs hitting the walls on either side of the ramp.

Sunterra's Heptonstall earned the prize for his invention of a tail docking length guide. The guide improved

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Winners of the FX Aherne award for innovative pork production (left to right): Dale Heptonstall of Sunterra Farms in Acme, Alta.; Garrett Gerbrandt of the Puratone Corporation in Niverville, Man.; Michael Dyck, Chair of the Aherne award committee; and Mary Haugh and Peter Jones of LMR Inc. in Listowel, Ont.

consistency of application of protocols and supported better communication between farrowing and finishing departments, which in turn supported improved production efficiency. The guide also supports overall high standards of animal care.

The recognition for Mary Haugh and Peter Jones of LMR Inc. was for their invention of the “Longarm” – a uniquely

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RO Ball award winners, Miranda Smit, University of Alberta; Leila Dominquez, University of Saskatchewan; Laura Eastwood, University of Saskatchewan and Michael Dyck, Associate Professor of the University of Alberta



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RO Ball Young Scientist Award winners

Three winners of the RO Ball Graduate Student Competition were announced at the Banff Pork Seminar. The award is designed to recognize outstanding young scientists and is awarded to graduate students who provide a best overall combination of good and relevant science, well-written abstract and excellent presentation.

First prize went to Miranda Smit of the University of Alberta for her research paper topic on “Effect of 3n-PUFA supplementation to sows on fatty acid profiles in serum and embryos.” Her research involved evaluating the effect of adding a proprietary fish oil based supplement to the sow’s gestation feed. The objective was to establish whether the DHA and EPA omega-3 fatty acids were available to embryos in the uterus.

Females receiving the treatment were given 84 grams per day of the product as a top dressing from day 60 of their first gestation, through a 21-day gestation and up to day 30 of their subsequent gestation, when they were euthanized so that the embryos could be recovered. Fatty acid profiles in the sows’ blood serum and in the embryos were measured. This showed that EPA and DHA levels were higher in both the sows’ blood and the embryos when they had been fed the supplemented diet. As DHA is important for embryo development, it may partly explain the increase in piglet growth that was noted in sows given a fish oil supplement, the paper concluded.

Second prize was awarded to Leila Dominguez of the University of Saskatchewan, for her topic on “Evaluation of heating systems in the swine grow-finish rooms.” Her work compared the use of a heat recovery ventilator (HRV) and a ground source heat pump (GSHP) with conventional forced air convection heating in rooms of grow-finish pigs. It showed that during a 3-month winter period, the HRV system reduced the cost of heating

and ventilation by 52% compared with the forced air system and the GSHP reduced energy consumption by 39%.

Third prize was earned by Laura Eastwood of the University of Saskatchewan, for her paper on “Dietary omega-6 to 3 fatty acid ratios effect on body fat mobilization in high producing sows.” Eastwood investigated whether altering the ratio of omega-6 to omega-3 fatty acids in the diet in high producing sows would affect fat mobilization and the ability of the sow to provide nutrients to her offspring. She found that the different ratios used in the trial did not affect sow body weight or piglet growth. ■

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PLENARY SESSION: We CAN feed the world

Making safe, affordable and abundant food a global reality



Global food costs are growing to dangerous levels, reaching record highs in January 2011. These high prices are expected to persist, according to the United Nations Food and Agriculture Organization (FAO). We are at a crossroads, says Jeff Simmons, President of Elanco Animal Health. In the next two years, tight supplies and rising food prices may stretch an already extended system to breaking point. No longer is the number of hungry people steadily decreasing, Simmons points out. In fact, he says, the number of malnourished could grow staggeringly as the population reaches 9 billion by mid-century.

Despite these massive challenges, there is a myth that people don't want safe, modern and efficient technology used in food production, Simmons explains. However, he says, surveys show that 95 percent of people are either neutral or fully supportive of using technology to produce their food. It's time to end the debate Simmons argues, noting that, according to the FAO, by 2050 we will need 100 percent more food and 70 percent of it must come from efficiency-enhancing technologies.

The high cost of high food costs

Keeping food prices affordable is critical to creating greater access for those living on low incomes. Due to continual innovation in food production, we've been able to keep food prices amazingly low. Farm gate prices for corn, wheat, rice and milk actually cost 40 to 85 percent less than in 1960 based on inflation-adjusted prices (Figure 1). Meanwhile, oil prices, a key input in food production, have skyrocketed, costing 337 percent more than the inflation-adjusted price in 1960. For example, the average milk price today is US\$14.40 per hundredweight, but the 1960 average price adjusted for inflation would make milk US\$22.89 today.

Food producers worldwide must be free to choose from a variety of safe and proven tools and methods for growing an abundance of food with maximum efficiency. And people everywhere must be free to choose from a variety of safe, wholesome and affordable foods for themselves and their families. The world still seeks a cure for AIDS, cancer and Alzheimer's disease. Hunger is a disease for which we already have a powerful weapon: technology. Yet despite the imperative of making food affordable for the world's poor, the myth persists that a majority of people are adamantly opposed to the use of cost-reducing food production technologies. The data, however, show otherwise.

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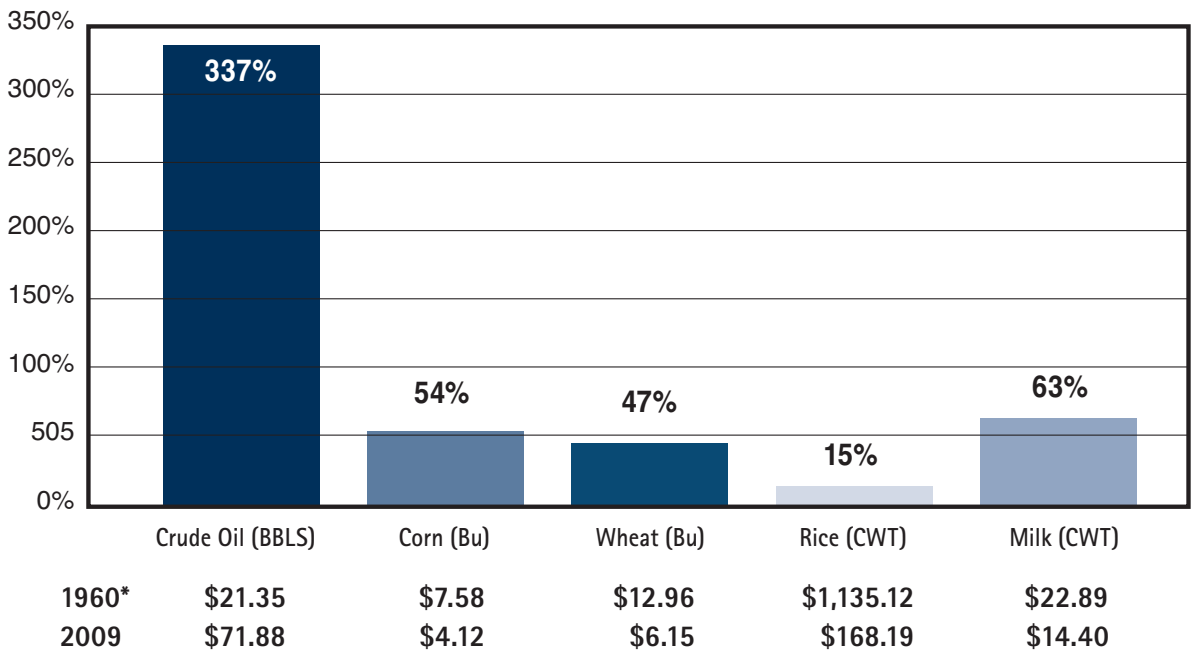
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Making safe, affordable and abundant food a global reality Continued

Figure 1: Technology keeps food cost low: Inflation-adjusted cost comparisons for key consumer commodities (1960 to 2009)



Note: Prices at well head and farm gate; all prices expressed in 2009 dollars; milk is Class III milk price



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What do consumer attitudes and behaviour data show?

The International Consumer Attitudes Study (ICAS) was the responsibility of two agricultural economists who reviewed more than 70 reports and studies about consumer attitudes and behaviours from around the world. All told, these studies represent the opinions of more than 97,000 people in 26 countries.

What did the ICAS project reveal?

Ninety five percent of consumers are *Food Buyers*. They choose foods produced by modern agriculture and are either neutral about or supportive of using efficiency-enhancing technologies to grow food. In general, these buyers make purchases based on taste, cost and nutrition (in that order). Some may wonder why food safety doesn't top the list. However, research shows that the "default" for most consumers is a belief that the foods they buy are safe to eat. In general, it's only on the rare occasions when food recalls make headlines that consumers consider changing their buying behaviour - at least temporarily. The majority of food consumers do not make everyday purchase decisions based on food safety concerns or how they feel about policy and political issues such as animal rights.

Four percent are *Lifestyle Buyers* who purchase food based largely on lifestyle factors: ethnicity and vegetarianism, or support for organic, local and Fair Trade food suppliers, etc. For this group, money isn't a factor in their decision.

Analysis of 28 studies that looked at consumer attitudes and behaviour regarding food purchases show that 99 percent of people choose to eat traditionally grown foods, lifestyle foods or both. Only a tiny percentage wants to eliminate food choices by banning specific agricultural technologies and/or methods. Thus, where it makes sense, global food chain leaders and organizations must join together to speak out for high food safety standards but against senseless bans on lifesaving, efficiency-enhancing technology - bans that raise food costs, decrease food production and increase the depletion of natural resources.

"Consumers want the right to make their own food-buying choices rather than having those choices made for them"

As ICAS and other research shows, 99 percent of consumers want taste, cost, nutrition and some lifestyle choices. Consumers want the right to make their own food-buying choices rather than having those choices made for them.

CONTINUED ON PAGE 24



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Making safe, affordable and abundant food a global reality Continued

Technology yields sustainability: The environmentally right solution

Finally, the responsibility of providing an abundant, affordable food supply with a broad variety of consumer choice must be delivered while protecting the very resources - the land, water and air - that sustain us. The facts are compelling and leave little room for argument. Production technologies are enabling farmers to grow more food with greater efficiency, allowing them to feed more people while consuming fewer natural resources and generating less animal waste. Modern, efficient food production is environmentally sustainable.

Data collected and analyzed over decades prove that advances in agricultural efficiency have far-reaching, positive effects on the environment. The data speak for themselves. For example, since 1944, annual production of milk per cow has quadrupled in the United States, which means we need far fewer cows to meet the demand for milk. Consequently:

- Modern production of every gallon of milk requires 65 percent less water and 90 percent less land than it did in 1944.
- 76 percent less manure is being produced for each gallon of milk sold.
- The “carbon footprint” for a gallon of milk in 2007 was 63 percent lower than it was in 1944.

The story is very much the same for every pound of beef found in the meat case:

- We need nearly a third fewer cattle today to meet demand than we did in 1977.
- Each pound of beef produced in the United States today requires 14 percent less water and 34 percent less land, and beef production generates 20 percent less manure than in 1977.

- The “carbon footprint” for each pound of beef we buy today is 18 percent lower than it was a generation ago.

“In 1961, an acre of wheat globally fed about two people. Today we can feed nearly six people from that same acre.”

We’ve seen similar gains in grain production. In 1961, an acre of wheat globally fed about two people. Today we can feed nearly six people from that same acre. Global data show that an acre of rice fed four in 1961 and doubled to more than eight people in 2009. Yet we have to continue to improve. To ensure our growing global population has sufficient food, we’re going to need to grow food with maximum efficiency and with as little impact on the environment as possible. As Dr. Jason Clay from the World Wildlife Foundation notes, “to feed 9 billion people and maintain the planet, we must freeze the footprint of food. If we exceed the carrying capacity of the planet, we are taking away the very resource base that will be needed by our children and our grandchildren”. We must use *less* to produce *more* from less.

Conclusions and final thoughts

The need to move boldly forward to address world hunger has never been more pressing. Grain stocks are at startlingly low levels. Food prices are at record highs and expected to grow. Population is sprinting toward 9 billion. We have a unique window of opportunity: A spotlight has been brought to the issue. The need is urgent!

The myth has been exposed. To make safe, affordable and abundant food a reality, we must focus on the three fundamental rights that come from access to technology:

CONTINUED ON PAGE 26

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Making safe, affordable and abundant food a global reality Continued

Food - a basic human right: Withholding safe, proven innovations that make food production more efficient is inhumane and should be considered morally unacceptable.

Choice - a consumer right: All consumers should have the right to spend their food budget as they see fit. Those who need affordable food choices should find them readily available. Affluent consumers should have lifestyle options.

Sustainability - environmentally right: Continuing to safeguard our natural resources while endeavouring to feed 9+ billion people by 2050 will require levels of efficient food production heretofore unachieved. Technology has helped us extend human life expectancy, virtually eliminate smallpox from the planet and send men to the moon. Likewise, safe, proven agri-food technologies can help the world's farmers produce more with less.

A time for action - What can you do?

Make it personal

Join me in making the end of global hunger a personal mission. Step out of your "bubble." See hunger up close and you will become an activist for safe, abundant, affordable food. Can there be a more important moral issue to address?

It's time for all of us to make food a right for everyone, everywhere. Make it your issue.

Engage

Most importantly to the readers of this paper: Engage with the key food chain influencers you know. The "napkin speech" is quite simple: Safe, affordable, abundant food = Technology (50-100-70) + Choice (95-4). Solutions to the challenges of eliminating world hunger and maximizing consumer choice exist. Only by working together can we successfully implement those solutions. To get engaged today, start by visiting www.plentytothinkabout.org.

Support

Finally, stand at the ready to support the 99 percent of the world's citizens who want unconstrained choice and a supply of safe, affordable and wholesome food - as well as to support the regulatory bodies that make it possible to produce that food. When you become aware of fringe groups who seek to eliminate choices, ban practices or even eliminate animal protein from our diets, respectfully ask them to prove their assertions using sound scientific, economic and environmental data, and share it with regulatory bodies.

Morally, scientifically, economically, environmentally and socially, the data support the use of technology. All these facts align to support a position on which we can all agree: committing ourselves to ensuring that a global supply of safe, affordable and abundant food can become a reality in our lifetime. ■

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PLENARY SESSION: We CAN feed the world

Livestock as a pathway out of poverty



Contributed by
Banff Pork Seminar

Livestock farming is shifting to the fast track as a key intervention in the global battle against hunger and poverty, says Dr. Gregg BeVier of the Bill & Melinda Gates Foundation.

The world's largest private foundation allocates over \$3 billion annually in giving to initiatives that bring innovations in health, development to the

global community, and support education in the United States.

The foundation started funding agriculture in 2006 as a way to help small farmers increase their productivity and reduce hunger in poverty. Livestock farming is becoming an important component of that investment portfolio, says BeVier, senior program officer for livestock investment. Over

\$92 million in Foundation grants went to livestock initiatives in the past several years and that is expected to increase over the next decade.

"Agriculture is a great intervention to use because three-quarters of the people in the less developed countries are doing it already it's a huge factor in their GDP," he says. "If you can figure out ways to support their self-sufficiency and sustainable improvement in agriculture, it is a way to provide them with more food and more income, to break the cycle of hunger and poverty."

Support for livestock farming is potentially a very powerful intervention since over 930 million people in sub-Saharan Africa and South Asia alone are livestock keepers and rely heavily on livestock for nutrition and income. The vast majority of the population in these and other less developed areas of the world live on \$1 or \$2 a day.

The foundation has a 'theory of change' for investing in strategic, levered interventions to get these people to a better

CONTINUED ON PAGE 28

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Livestock as a pathway out of poverty *Continued*

quality of life. "It's about understanding how change occurs and how we make the greatest impact," says BeVier.

The Foundation's outlook also includes an agenda of 'impatient optimism' that is helping support global efforts, such as the United Nation's Millennium Development Goal to reduce poverty and hunger by 50 percent by the year 2015. "That's sort of our north star, if you will," he says. "It's a tremendous challenge. But it's within reach. And agriculture, including livestock farming, is a critical part of the solution."

Five focus areas

The Bill & Melinda Gates Foundation has five areas it focuses on as part of its global development program. The first and largest of these groups is agricultural development. Other groups include water sanitation and hygiene, financial services, global libraries and special initiatives. The Foundation typically does not go into conflict or post conflict areas and focuses on areas of greatest need where it can make a powerful impact.

"An indigenous chicken in Kenya can produce 40 eggs a year, but in the developed world a chicken may produce 240 eggs"

The focus for agricultural investment is sustainable productivity improvement, says BeVier. As an example, an indigenous chicken in Kenya can produce 40 eggs a year, but in the developed world a chicken may produce 240 eggs. "There's a 200 egg per year gap just because of differences in genetics and health and management. We would look at that situation and say, how could an intervention close that gap?"

The Foundation takes a three-pronged approach to support its agricultural interventions through efforts in research and development, policy and access to markets, to create an environment where the investments have the best opportunity to benefit the farmer.

High-growth area, GDP driver

There is strong and growing demand for livestock interventions, says BeVier. "If you look at the FAO data, there's going to be a big demand for meat consumption and animal sourced foods in the future. In the regions we're looking at, the rise in demand is projected at 150 or 160. So as a livestock team, we can stand up before our leadership group and say one of the reasons we need to invest in this area is it's a very high growth area. It's an important GDP driver."

Currently livestock interventions represent about six percent of the overall Agriculture Development portfolio in the Foundation, but BeVier is a strong advocate and believer that this will grow over the next several years. Hurdles have included the simple fact that livestock is a tough area to implement improvement in the less developed world, particularly compared to interventions in plant-based agriculture, but the Foundation has researched strategies to overcome logistical challenges and identify high value intervention options.

This work is now shifting more strongly to implementation, says BeVier. "I see us really starting to focus more on livestock initiatives. We've really narrowed down our strategy to animal health and livestock genetics. When we look at the value of production as well as the productivity gap that could be improved with interventions in these areas, it's extraordinary. So you're going to see more of our grants on diagnostics, medicine, vaccines and different aspects of genetics."

As part of this effort, the Foundation started with a list of over 100 priority diseases to address and has since slashed that down to 15, and now further to six. "That's how we look at the process. We look at the global need, then we look at the feasibility of tackling the disease, we look at what others are doing, and we look at our unique advantages. Then we act where we can make the best contribution." ■



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PLENARY SESSION: Local and global economics

Prediction of future prices and cost of production



The near financial collapse in the US and the EU caused by too much leverage reinforced the fact that commodity markets move with the general economy, says Karl Skold of Westside Economics, Omaha, Nebraska. As the economy dipped in 2008 so did energy prices, he notes. Commodity prices followed. Crude oil prices, influenced by aggregate demand, are highly correlated with grain and oilseed markets, Skold points out. Biofuel subsidies and mandates have linked agriculture to energy. No longer do only exchange rates matter. Against a background of sluggish economic growth in developing countries but stronger growth in developing nations, he assesses the likely trends in feed costs and hog prices.

In recent years, demand outpaces supply

The pork sector has been faced with escalating feed costs now for about five years. Prices were driven higher primarily by biofuel demand that was aided by government mandates, incentives and trade policies. The expansion of meat and poultry consumption in developing economies also expanded the demand for feed grains and oilseeds.

The US corn market became the focal point of price determination due to its size and because of the growing

demand for ethanol. Ethanol grew to use over 40% of the US corn crop. Chinese demand, due to expanding livestock and poultry feeding, drove the world's markets. China now accounts for nearly 60% of the world's soybean imports.

A series of less than favourable crop conditions around the world made it difficult for supply to catch up with demand. Supply, even with record production, could not keep pace. A series of production shortfalls around the world have kept balance sheets tight and prices on the upswing. Only with the



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financial crisis did feed costs dip, but they stayed well above previous historical ranges.

In 2011, with less than ideal US corn crops for two years in a row, the market needed to cut demand. This past summer, corn prices rallied to \$300/metric ton (\$US 7.79/bushel) to do so. The US poultry sector provided most of the demand cuts. Cattle in smaller feedlots declined. Feed demand declined. Ethanol demand slowed as US consumers used less gasoline.

"A series of production shortfalls around the world have kept balance sheets tight and prices on the upswing"

Exports were slashed as other competing feedstuffs became available. In the past year, growth in production outside of the US added needed competition to US corn as a feed grain. Larger crops in Russia and the Ukraine helped add needed feed grains and wheat supplies. Ending stocks for the 2010/2011 crop year were above trade expectations and expanded even as US crop output declined.

Growth in wheat and feed grain supplies outside of the US provided a needed cushion. Wheat became competitive with corn. In 2010/2011, the total supply of grain outside of the US expanded. In 2011/2012, the total supply of grain outside of the US is expected to expand again by 6%. Ending stocks outside of the US are expected to move higher by the end of 2011/2012 crop year.

Stocks still tight, but with some cushion

In the US, the feed grain situation will remain tight, but has the opportunity to expand stocks with expected solid plantings and good weather. The outcome of US feed grain supply and demand will be a key driver of price into 2012.

The weather pattern suggested by most is a La Nina pattern that is weaker than what existed in 2011. This suggests a dry trend in Argentina and Southern Brazil. In North America, colder and wetter conditions across Canada and northern United States will likely exist, along with warmer and drier conditions across the southern US. Unfortunately, La Nina does not suggest a break in the severe drought across the southwestern US.

Prices favour continued expansion of feed grain and wheat supplies worldwide. Prices favour planting corn over soybeans in the US and South America. Without serious weather issues and given the price incentives, feed grain and wheat production is expected to increase in the 2011/2012 crop year and beyond.

Supplies are slowly beginning to catch up with demand. Supply is responding to strong price incentives and the growth in biofuel demand is slowing. By the end of 2011, the subsidies for ethanol and biodiesel production will likely end.

Moving into 2012, growth in US ethanol demand will slow. Incremental feed grain supplies worldwide will likely maintain sluggish export demand. This should likely keep a lid on prices and US corn prices will find competition from wheat and other feed grains. Energy prices, a relatively tight balance sheet, and tight-fisted farmers will support prices. A wide

CONTINUED ON PAGE 32

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Prediction of future prices and cost of production Continued

trading range is expected with price direction eventually determined by the weather.

Feed costs will still be greatly determined by weather and crop outcomes. The price ranges for corn are assessed through the US corn balance sheet for 2012/2013 crop. With good crop conditions, feed grain prices will likely move lower in 2012.

The key risks for 2012 feed costs will be:

- La Nina providing adverse weather in South America and a spreading drought beyond the southwestern US
- Increase in Chinese buying of corn above 3 mmt
- Stronger than expected recovery of US and EU economies that gives an incremental boost to energy prices.

Pork trade

Expansion in pork trade greatly helped hog producers with high feed costs in 2011. The world's pork exports hit a new high in 2011. Exports increased to 6.574 mmt, up 9% from one year prior. The US and EU gained export share. In 2011 US pork exports were up 17% from the 2010 level to 2.246 mmt. The EU's exports expanded by 14% to 2.0 mmt. In 2011, Canadian pork exports should be up about 2% from year prior to 1.2 mmt. Through most of 2011, Canadian exports to the US and Japan showed declines. Gains were seen in exports to China, South Korea and Russia.

Three events boosted pork trade in 2011:

- The outbreak of foot-and-mouth disease in South Korea during the fall of 2010. One-third of the nation's hog inventory was culled. As pork prices jumped higher, South Korea cut import tariffs and boosted imports.

- In China, remnants of disease and low prices from previous years pushed hog slaughter and pork production lower in 2011. Consumer inflation driven by food prices - particularly pork- reached 6.7% in July 2011. Food inflation reached double-digit levels. The Chinese increased imports to cool inflation.
- In March, in Japan, an earthquake and then tsunami caused nuclear fallout across key livestock production regions. This, combined with a strong Yen relative to the US dollar, boosted Japanese pork imports.

"South Korea accounted for over half of the gain in the world's pork imports from 2010 to 2011"

In 2011 the world's pork imports expanded by 7% from year prior. South Korea accounted for over half of the gain in the world's pork imports from 2010 to 2011. China and Hong Kong accounted for 35% of the world's increase in pork imports. In 2011, Russian pork imports were up nearly 6% and accounted for nearly 12% of the increase in the world's pork trade.

China and South Korea are expected to expand pork production in 2012, particularly during the last half of the year. These production increases should dampen the increase in world pork trade. Also, with a lower import quota, Russia is expected to reduce its appetite for imported pork. World pork exports are expected to be fairly flat. The export outlook remains robust, but will likely not have the froth of 2011.

CONTINUED ON PAGE 34

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Prediction of future prices and cost of production Continued

Table 1: Hog price forecast

	Producer sold net ¹	National Wt. Avg base ²	Producer sold net ³
2010			
Q1	68.32	65.91	68.32
Q2	79.42	77.04	79.42
Q3	80.69	78.21	80.69
Q4	69.26	67.30	69.26
Annual	74.72	72.11	74.42
2011			
Q1	80.63	78.38	80.63
Q2	92.39	89.49	92.39
Q3	95.65	92.71	95.65
Q4	79-83	81-85	86.00
Annual	87-88	85-86	88.67
2012			
Q1	82-86	83-88	87.50
Q2	89-93	89-95	95.00
Q3	87-91	91-97	92.50
Q4	70-74	80-87	83.00
Annual	83-89	86-94	89.50

¹ Plain, as of September 29, 2011 ² LMIC, as of October 28, 2011 ³ Skold

A little more pork

Hog production in North America is expected to expand modestly in 2012. Most of the gains in production will likely be attributed to productivity gains, not breeding herd growth. Hog production in Canada should be up about one percent. Profitability is near break-even and has not been sufficient to suggest significant growth. In 2012, US pork production should be up just over one percent from the 2011 level.

With modest increases in exports and production, per capita domestic use is expected to decline slightly from 2011 levels. Sharp declines in competing supplies of beef and poultry will give pork demand a boost in 2012. Lack of active pork belly freezer in-movements should support hog prices through the summer. Anticipation of only modest gains in exports keeps us from boosting price expectations further. In 2012, hog prices should be similar to the 2011 price level. Table 1 gives our forecast with two alternative assessments.

Downside risk to the forecast will likely occur during the last half of the year. The potential for US and Canadian supplies to expand more than expected would increase during the last half of 2012. Also, increases in Chinese production would likely hit more toward the second half of 2012. ■

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PLENARY SESSION: Local and global economics

Seven key 'risk drivers' pork players should watch

Contributed by Banff Pork Seminar



Business today moves at a high rate of speed. Fittingly, so did the detailed analysis of Richard Shanks, national managing director for Aon Risk Solutions – a top risk advisor to many of the world's leading companies – who downloaded a wealth of thoughts and advice in a talk on risk management at the 2012 Banff Pork Seminar.

“Managing risk today is more complex than ever,” says

Shanks. “In a dynamic, fast-changing, globally connected world, brands and even industries can rise and fall dramatically in response to events both within and outside their control.”

“One of the biggest mistakes you can make is thinking ‘it won't happen to us.’” says Shanks. “Look at BP. Look at Toyota. Look at what something like a foot and mouth outbreak could do if it happened here. The key thing is to understand risks and manage them. You can't guarantee to avoid them, but you can mitigate them.”

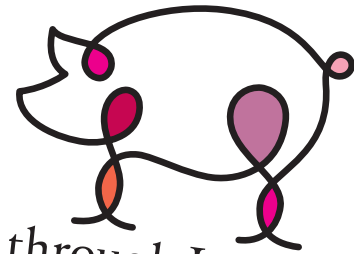
One key concept Shanks shared was his take on “seven industry risk profile drivers” that livestock industries, including the pork industry, should be aware of today.

1. Growing consumer food safety concern: Fringe groups, the media and the fact one in six people will develop a food borne illness every year are all factors behind data showing about half of people in the US aren't confident in the food system.

2. Increased supply system complexity: With a 'logo salad' of food brands on his presentation slide, Shanks drove home the point that all represent complex, independent, yet widely overlapping food systems – ones where it is easy for negative events to spread quickly and damage many.

3. Global sourcing risk increases: Global connections can undermine domestic food security, he says. A product, while branded Canadian or American, may be

CONTINUED ON PAGE 36



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Seven key 'risk drivers' pork players should watch *Continued*



There is growing consumer concern about food safety in North America.

sourced through dozens of parts of the world, some of which may not have the same standards or oversight.

4. Regulatory changes: These come and go but always carry the potential to send waves of shake-up throughout an industry. Country of origin labelling (COOL) is one recent threat the Canadian pork industry knows well that stands as a good example.

5. Increasing product recall events and costs: "The expectations are higher than ever and that can mean huge costs that can cripple or even bankrupt a company or industry," he says.

6. The media multiplier effect: "Media coverage today has a tremendous impact on how quick

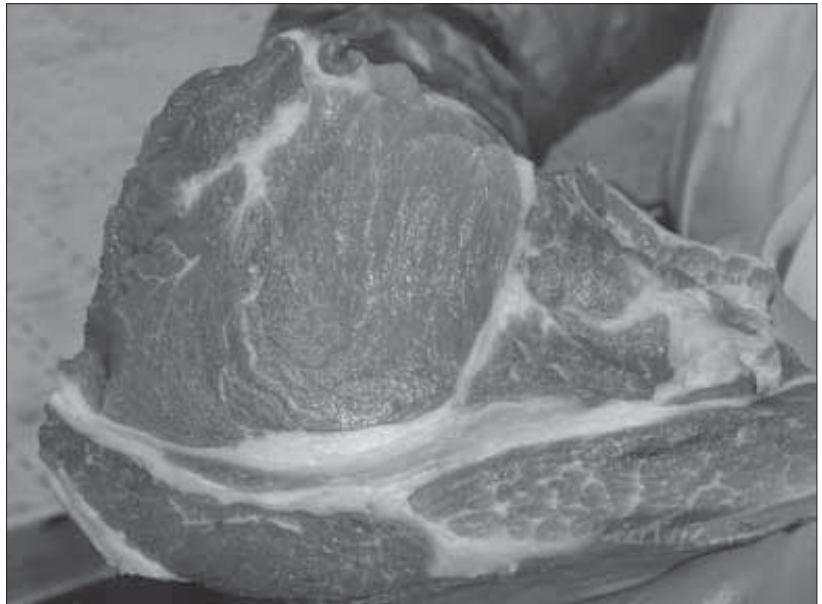
things can turn," says Shanks. "It makes crisis management more important than ever. Maple Leaf in Canada is an example of how to do it right, under intense media pressure."

7. Greater pressure for sustainability: "We all know this is raising expectations across the board. One thing for sure is it's not going away. There will continue to be greater pressure for sustainability. One factor under this umbrella he sees as a potential game-changer is pressure around water use. "Water is going to be a major stress factor through 2050. It's an issue as a pork industry you need to be on top of." ■



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BREAKOUT SESSION

Reducing feed costs

Summarized by Bernie Peet

Diet formulations using lower energy feeds

Because of the rapid increase in ingredient prices in recent years, swine producers have explored alternative ingredients and alternative formulation strategies in attempts to minimize feed costs, notes Dr. Mike Tokach of Kansas State University. A strategy that makes sense for some producers, he says, is to lower the energy density of the diet, either by removing dietary fat or by using lower energy ingredients. His presentation explored the impact of using lower energy diets and provides guidelines to make sure that all the potential ramifications of such a strategy are considered.

Introduction

“When we talk about low energy diets, not only is the energy level of the diet reduced, but the fibre content is often greatly increased as corn and soybean meal are displaced with ingredients such as wheat by-products, canola meal, soybean hulls, corn by-products or other high fibre ingredients,” Tokach points out. “The impact of the fibre components is often difficult to separate from the impacts of the energy level itself when assessing the influence of lower energy diets on pig performance.”

What happens when pigs are fed lower energy, higher fibre diets?

- ADG is usually reduced; however, the magnitude depends on genetics, energy level, and environment
- Feed efficiency is always worse
- Carcass yield is reduced (again magnitude varies, but yield will go down due to an increase in large intestine content and weight)
- Bulk density of the diet is reduced, thus, transportation cost can increase if more loads of feed are required and a lower quantity (weight) of feed can be stored at the production site. Bulk density also affects feed handling characteristics that may lead to a higher number of feed outages
- Although relatively minor compared to other impacts, iodine value, which is an indicator of carcass fat softness, has increased in some trials indicating that carcass fat is softer for pigs fed lower energy, higher fibre diets. The reason for this response may be because fat usually becomes a higher percentage of the dietary energy in high fibre diets and because pigs fed diets with higher fibre levels usually have less backfat, which leads to higher iodine values.
- Manure systems are influenced by an increased volume of manure production and manure that may result in more retained solids in storage facilities.

“The key to understanding whether low energy diets are economically justified is to understand whether the costs of these negative impacts are offset by the diet cost savings from using the low energy ingredients,” says Tokach. “So how do you go about estimating these impacts?” he asks.



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Assigning nutrient values for an ingredient

"First, we need to know the nutrient values for the low energy ingredient to understand how much dietary energy will be reduced with the inclusion, which is not as easy as it sounds," he explains. "Nutrient values can be obtained from published sources, calculated from laboratory assays, estimated from nutrient values of other ingredients, or through a combination of all of the above. All of these approaches have their own issues and none are perfect. Often, lower energy ingredients are more variable in composition than corn and soybean meal and the variability must be considered in formulation to avoid over-valuing the ingredient."

Tokach notes that the nutrient that is most difficult to estimate - because it cannot be measured directly in a laboratory - is energy. "Energy values can be estimated from chemical analysis, such as analyzed moisture, NDF, ADF, crude fibre, starch, fat and crude protein; however, the equations used for the estimates were, most often, not developed with the ingredient that you want to estimate an energy value for."

There are several sources of equations that can be used to estimate the energy value of an ingredient. "The most important point is to not use a standard equation to estimate the energy value for one ingredient and use a book value to estimate the energy value for another ingredient," Tokach says. "It is also important to use the same lab and same estimation equation for the known ingredient as the unknown ingredient. They need to be compared on the same basis."

Impact of dietary energy on ADG, ADFI and F/G

As the energy density of the diet increases for pigs under field conditions, most pigs have linear improvements in ADG, Tokach notes. "The rate of improvement in ADG with each change in energy density can vary; however, for calculations, a simple rule of thumb is that ADG increases by about 3% for every 100 kcal/kg increase in ME content of the diet," he explains. "Conversely, ADG decreases by 3% for every 100 kcal/kg decrease in ME content of the diet."

"The most consistent response to decreasing dietary energy is poorer feed efficiency"

Another part of the reason that there is variability in the impact of dietary energy on ADG is that some low energy ingredients have a more negative impact on ADFI than others, Tokach continues. "As dietary energy is decreased, pigs often increase feed intake, such that energy consumption is not reduced as much as the dietary energy was reduced. However, as energy density decreases further and certain fibre components increase in the diet, pigs cannot continue to consume more feed. Thus, feed intake and energy intake eventually decrease." This is one

CONTINUED ON PAGE 40



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Reducing feed costs Continued

of the reasons that moderate fibre levels can have a smaller negative impact on growth performance relative to the large negative effect of higher levels, he concludes.

The most consistent response to decreasing dietary energy is poorer feed efficiency, Tokach adds. "If the diet energy is valued correctly, feed efficiency will worsen linearly as dietary energy decreases."

Estimating cost of the decreased growth rate

The cost of the poorer F/G with lower energy diets is easy to determine because feed cost per pig must still be lower with the higher feed usage to make the lower energy diet economical. Assigning an economic value to growth rate is more difficult, according to Tokach. "The key question is whether pigs can achieve the same ideal market weight when low or high energy diets are fed," he says. "If excess space is available, the cost of the reduced ADG may be low and only a factor for the last pigs removed from the barn. If however, space is limited, such as during the summer months, the decreased ADG must be valued on an income over feed basis due to the lost opportunity from lower market weight." This can quickly nullify any advantage of reduced diet cost from using a lower energy diet, especially when market prices are considerably higher relative to feed costs, he notes.

What about the value and level of impact on other variables?

The increase in dietary fibre in lower density diets leads to increases in large intestine weight at market and thus yield is reduced. Pigs fed high fibre, lower energy diets usually have reduced backfat, which further reduces yield. "The impact

of dietary energy on yield can be variable, but a value of 0.25% reduction in yield for every 100 kcal/kg reduction in dietary energy can provide an estimate for base economic calculations," comments Tokach. "If increasing the lean percentage will further increase lean premium, the positive impact of lowering energy density on lean percentage should also be included in the economic equation."

The cost of decreasing the bulk density of the diet will vary greatly depending on how feed is processed and delivered. Low energy diets will increase the volume required to transport and store the same quantity (tons) of feed, Tokach notes.

"Some trials indicate that lowering the energy density of the diet can increase the variability in growth rate of pigs in the barn"

"The softness of the fat, which is often measured as the iodine value of the fat, is more closely related to dietary fat content and composition than fibre level," he continues. "However, it does appear that feeding low energy diets can increase the amount of unsaturated fat in the body, which results in higher iodine value readings."

Another potential downside of feeding higher fibre diets that needs to be considered is variability, Tokach believes. "The low energy ingredient itself can often be much more variable in composition than the grain and soybean meal that it is replacing in the diet," he says. "Also, some trials indicate that lowering the energy density of the diet can increase the variability in growth rate of pigs in the barn. Again, this is a minor consideration compared to the impacts on pig performance and carcass yield; however, it should be considered."

Considerable research is currently being done to minimize the negative impact of feeding lower energy, high fibre diets, Tokach points out. "While all the negative effects cannot be eliminated, it does appear that we can reduce the impact by switching pigs to higher energy diets for 3 or more weeks before market."

CONTINUED ON PAGE 42

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Reducing feed costs Continued

Oilseed co-products as alternative ingredients

With feed tallow, grease blends, and canola oil prices at record highs, oilseed and biodiesel co-products offer the only cost-effective alternative to supplementing dietary fats in swine diets, believes Eduardo Beltranena, of Alberta Agriculture and Rural Development. Expeller-pressed, extruded-pressed and screw-pressed canola meal or cake, the latter two processed locally, offer opportunities to reduce producers' feed cost and beef up dietary energy, he says. There are also opportunities for feeding solvent-extracted canola meal. The glucosinolate content of commercially sourced canola meal is now very low so high dietary inclusion rates can be sustained with confidence, Beltranena notes. His presentation summarized recent research on feeding canola biodiesel co-products to pigs.

"The recent increase in availability of canola co-products with higher residual oil content has made them economically attractive given the escalating cost of traditional feed fats and the opportunity cost of cereal grain starch," explains Beltranena. "Distillers dried grains with solubles (DDGS) is replacing cereal grains in diets at ever greater inclusion rates, but because these are depleted of starch, calories from residual oil from oilseed and biodiesel co-products are a welcome addition to monogastric animal diets.

Feeding solvent-extracted canola meal

Solvent-extracted canola meal has been fed at conservative levels due to palatability issues that affect feed intake, and

fibre content that limits its dietary energy value, Beltranena points out. "Plant breeders have helped us overcome the first of these limitations by reducing total glucosinolate content over the years from ~120–150 in rapeseed to as low as 2 $\mu\text{mol/g}$, that we have tested recently in commercially-sourced meal," he comments. "Formulating diets on the basis of net energy has helped us overcome the second limitation. Increasing feeding levels previously resulted in reduced animal performance as we did not account for greater heat production." In addition, he adds, the price of canola meal has been under downward pressure.

"Pigs fed 24% canola meal reached slaughter weight only 3 days later than pigs fed no canola meal"


Studies at the University of Alberta suggest that up to 20% solvent-extracted canola meal can be used to substitute for soybean meal without impacting growth, although at higher levels there was a trend towards reduced feed efficiency.

"We have also pushed the inclusion of solvent-extracted canola meal in hog diets containing DDGS," continues Beltranena. "Replacing field pea and soybean meal with canola meal in diets with 15% wheat DDGS reduced daily weight gain, but only by 7 g for every 6% increase in canola meal inclusion up to 24%," he says. "Pigs fed 24% canola meal reached slaughter weight only 3 days later than pigs fed no canola meal." There was no effect on carcass characteristics.

Feeding yellow- vs. dark-seeded canola meal


Reducing the fibre content of solvent-extracted canola meal has been a priority for monogastric animal feeding, Beltranena believes. Compared to conventional dark-seeded canola, yellow-seeded canola meal has tested higher in protein (42% vs. 38%) and phosphorus content (1.4% vs. 1.0%), but lower in crude fibre content (7.7% vs. 12%). "The lower fibre in yellow-seeded canola is due to a thinner seed coat and this permits higher inclusions in diets compared to conventional

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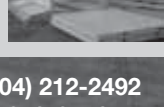
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Today's canola has a very low level of glucosinolate, allowing it to be used at high levels in pig diets(i-stock photo).

canola meal," he says. "However, yellow-seeded canola meal does contain higher glucosinolate content."

Feeding up to 30% of either yellow- or dark-seeded canola meal is feasible in commercial diets with high inclusions of wheat DDGS, Beltranena notes. "Hog performance and carcass traits were adequate, so canola meal and wheat DDGS together can make up 50% of commercial hog diets."

Feeding expeller-pressed canola meal

Expeller-pressed canola meal contains more residual oil (~12%) than solvent-extracted canola meal (2-3%). It has

"An inclusion rate of up to 20% in nursery diets from one week after weaning did not affect daily weight gain, feed efficiency or pig weight at the end of the trial"

become an attractive feedstuff in Manitoba due to the proximity to the Ste. Agathe Viterra plant.

"Trials in which this ingredient was used in grow-finish diets suggest that, as

the level of canola meal increased, feed intake, weight gain and feed efficiency were affected, but there was no effect on carcass backfat thickness, loin depth, or jowl fatty acid profile," says Beltranena. "We concluded that the amount of expeller-pressed canola meal included in hog diets should be targeted to an expected growth performance and carcass quality."

An inclusion rate of up to 20% in nursery diets from one week after weaning did not affect daily weight

gain, feed efficiency or pig weight at the end of the trial. "As expected, feeding more dietary fat due to the residual oil content of the meal reduced feed disappearance," Beltranena notes.

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Reducing feed costs Continued

Feeding extruded and pressed canola meal

Extruded and pressed canola meal contains even more residual oil (~17%) than expeller-pressed meal or solvent-extracted canola meal. "One must keep in mind that the processing focus is on biodiesel, not meal quality, and that sourcing lower quality product, such as heated or green seed affects meal variability, so testing should be done regularly," advises Beltranena.

In a trial where finishing pigs were fed either 7.5 or 15% extruded-pressed canola meal, increasing dietary meal level decreased overall feed disappearance by 115 g/d for each 7.5% extruded meal. It also reduced dressing percentage by 0.5 percentage units.

Feeding green canola seed

Recently, there has been renewed interest in feeding green canola seed to livestock as it may help to reduce feed cost, notes Beltranena. "In a recent trial involving finishing pigs, there were no effects of feeding up to 15% green seed on daily weight gain, feed disappearance and feed:gain," he explains. "However, there was a trend for feed conversion to be better for the pigs fed the control diet compared to those fed green canola seed."

Dressing percentage was lower for hogs fed 15% green canola seed, compared to other dietary treatments, Beltranena notes, but carcass characteristics were similar. "Feed cost was higher for hogs fed the control regimen and decreased as green canola seed level increased being lowest at 15% inclusion," he says. These results indicated that other than a correctable drop in dressing percentage at high inclusions ($\geq 10\%$), feeding up to 15% green canola seed resulted in reasonable hog performance and carcass traits."

Conclusions and implications

Differential cost per Mcal NE of residual oil content can be used as a guideline to decide the 'best buy' among canola co-products to reduce feed cost, Beltranena concludes. "The more costly that feed oil and tallow become, the greater the buying opportunities," he says. "However, co-product variability, due to anti-nutritional factors, local processing and seed quality, need to be considered." Inclusion of oilseed meal or co-products with residual oil content return the most when fed to pigs during the energy-dependent phase of growth, which is the late nursery and grower phase. ■

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BREAKOUT SESSION

Farrowing and weaning management: Towards 40 p/s/y

Summarized by Bernie Peet



Keeping baby pigs alive

Most production systems today have the basic tools available to achieve low pre-weaning mortality, says Dr. Ross Kiehne from the Swine Vet Center, Saint Peter, Minnesota. Twenty years ago, he says, we had to be concerned about buildings, flooring, crates, ventilation, maternal genetic lines, etc. Most of these are now at least adequate to achieve top 10% results on nearly every farm, yet the majority of them do not, he points out. He examines the areas of management which require attention in order to achieve low mortality rates.

Introduction

Our top farms have achieved 10% or less death loss from birth to market. On a national scale, 20% of pigs farrowed die before weaning, including stillbirths. A good goal is an 85% survival rate with 5% or less stillborn and 10% or less PWM.

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Mistakes in the farrowing barn

Here are the most common mistakes made in the farrowing barn:

Not feeding for a big pig

Feed sows as individuals. Feed to condition up to 3-4 weeks pre-farrowing, striving to have all sows at a body condition score of 3.0. Then increase the feed by 2-4 lbs. to provide adequate nutrition in order to get a big pig at birth. Sows should farrow at a body condition score of 3.25 to 3.50.

“Minor ventilation problems resulting in drafts can create major PWM problems”

Inducing too early

Many farms create smaller, weaker pigs at birth by inducing sows too early. This can easily be checked by stopping the induction program for a couple of weeks to determine true gestation length. Gestation length in swine varies from

111 to 119 days and if a farm is inducing on day 114, they may be farrowing piglets 4-5 days early, making survival very difficult. Farms inducing early often have more scour problems, which can elevate death loss.

Running barn temperatures too low during farrowing

Remember that the newborn piglets come from an environment of 40°C in the sow's uterus and are born into one of 20-23°C which is a 17°C drop in temperature in a few seconds. Placing heat lamps behind the sow during farrowing reduces PWM by 3% and we recommend using two heat lamps during farrowing.

Heat lamp management:

Location - One near the back of the crate at farrowing and one alongside the sow for the first 24-48 hours.

Height - Use thermometers or an infrared ray gun to determine the actual temperature at piglet level. Optimal temperature there is 35-38°C.

Wattage - 100-125 watts is adequate.

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Farrowing and weaning management: Towards 40 p/s/y Continued



The process of warming the pigs and split suckling is the most important thing you can accomplish on the day of farrowing, according to Dr. Ross Kiehne

Movement within the crate - It's best to have a telescoping swing arm to hang the lamp from, so that, as pigs age, they can be brought up toward the front.

Failure to protect piglets from drafts

When analyzing drafts, look at room air speed, distribution of air inlets, crate or pen dividers and black pads. Minor ventilation problems resulting in drafts can create major PWM problems. Heat lamps with a black pad significantly reduce drafts and increase the

“power” of the heat lamp because the pads will hold the heat more. Crate/pen dividers must be solid in order to reduce drafts and piglet energy loss. Energy management of the piglet is essential. Simply stated, we want more energy going into the piglet than going out.

Failure to provide adequate labour at the appropriate times

Timing is everything in the farrowing barn. Most PWM (75-80% of it) occurs in the first 48-72 hours after birth. We

must focus our efforts on those first 2-3 days. A trial conducted by the University of Minnesota on a large commercial farm showed a reduction in PWM from 12% to 6% by just adding labour to half of the crates in a room.

Not drying off piglets

Piglets can be dried off with powder such as Quick Dry or Mistral, although towels are used by others. Even the split suckling boxes can initially be used as dry-off boxes. A small amount of rolled oats or sow feed is put in the bottom of the boxes and a heat lamp placed over them. Pigs are placed in the boxes immediately after farrowing and allowed to warm up and dry off before they are put back on the sow. Newly farrowed pigs continually replace the pigs in the box. The result is a much more vigorous piglet that will nurse much more aggressively and ingest maximum amounts of colostrum. Of course, the hot boxes also accomplish

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Farrowing and weaning management: Towards 40 p/s/y Continued

split suckling since not all pigs are nursing at the same time. This process of warming the pigs and split suckling is the most important thing you can accomplish on the day of farrowing.

Not getting adequate colostrum into the piglets on day 1

Colostrum is essential to all newborn pigs since it is a source of warmth (40°C), energy and antibodies. All pigs must get colostrum within the first 6 hours after birth. A high percentage of PWM occurs because pigs never received colostrum which is easily diagnosed on post mortem examination. Many producers mark piglets that they have observed suckling colostrum so that they can stop worrying about those individuals. Most of them mark the “at risk” piglets on their heads and observe/work with these to make sure they are getting sufficient colostrum.

Not having a dedicated “day 1” farrowing staff

Achieving low PWM (i.e., high survivability) is much more difficult today. Today’s genetics very often have 15 total born and 13+ born alive, which

is a big challenge. Big litters of 20+ pigs are more commonly seen today and most farms have dedicated ‘Day 1’ personnel that stay in rooms that are farrowing. These dedicated Day 1 people must be able to provide TLC, be decision makers and goal oriented, be good work organizers and capable of multi-tasking.

“The focus is to get colostrum into all piglets within the first 6 hours after birth: the sooner, the better”

The focus is to get colostrum into all piglets within the first 6 hours after birth: the sooner, the better. Many farms are extending hours for Day 1 coverage and some are even going to 24 hour coverage.

Doing too much to the piglet

Clipping teeth, docking tails, notching ears, tattooing and injecting with iron and antibiotics is too much stress for the piglet and can be a subtle cause of

increased PWM. Some producers have stopped clipping teeth altogether.

Moving too many pigs when sorting

Do a minimal amount of pig sorting. Most pigs should get colostrum from their own mother. Our recommendation is to only move pigs from litters of 15+ pigs and to move the big pigs wherever possible. For litters of 11 to 14, pigs should only be moved if there are not enough quality teats.

Summary

In summary, we like to refer to “The Big Five” for good farrowing barn management and low PWM. These are correct preparation of the sow prior to farrowing, provision of a clean, warm and draft-free environment for the piglet, an efficient work plan, good colostrum management and not allowing starve-outs to occur.

With high sow feed costs, it’s important to maximize piglet output. By saving more pigs, feed cost/pig is reduced. More and more farms are paying attention to this and are achieving 30 pigs/sow/year or better.

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Weaning management

Multiple site production has made a large impact on herd health and how we manage flows of weaned pigs, points out Dr. Bob Goodband from Kansas State University. In addition, he notes, we have seen weaning ages creep up to an average of 19 to 21 days of age. However, despite these changes, several key management practices remain important. These focus around the three primary needs of the weaned pig: feed, water and the correct environment. He considers the management of the newly weaned pig, in particular the nutritional aspects.

Establishing the newly weaned pig

The nursery room should be dry and warmed up before pigs arrive and supplemental heat sources should be in place and functioning. Mat feeding for the first 3 days in the nursery is encouraged.

While average daily gain and feed efficiency are not improved with mat feeding, percentage of pig removals has been shown to significantly decrease when pigs are mat fed for 3 days. Mat feeding for longer periods tends to result in poorer feed efficiency.

All drinkers should be functioning and adjusted to the proper height. Drinkers should be set at shoulder height for the smaller pigs in the pen. Cup drinkers have been used successfully and reduce water wastage compared to nipple drinkers. Using wet/dry feeders as a water source in the nursery phase will result in decreased growth performance of weanling pigs. Regardless of whether the first diet after weaning is bagged or in bulk, the feed gate in all feeders should be closed before the first pellets are placed in them. The feed gate then is opened so that a small amount of feed is visible in the feed pan. Placing pelleted feed into empty feeders with the gate open will result in large amounts of feed wastage.

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Farrowing and weaning management: Towards 40 p/s/y *Continued*

If all of the proper preparatory procedures are performed, the pigs can be left to rest for approximately 36 hours after weaning. Pigs should be observed to ensure that they have found the water source and are beginning to develop feeding behaviour. The objective during the period immediately after weaning is to only make minor environmental adjustments and let the pigs rest and acclimatize.

"Using wet/dry feeders as a water source in the nursery phase will result in decreased growth performance of weaning pigs"

By 36 hours after placement, most pigs will have found water and started to exhibit feeding behaviour. However, this is a critical time period to identify pigs that have not eaten or are becoming dehydrated. This may involve hand feeding a few pellets or using a gruel administered with a syringe; as little as 20 to 30 grams of feed will provide enough energy to keep the pig from starving. It is critical for small pigs with low body fat reserves to have a readily available energy source. We believe that teaching feeding behaviour to a small number of pigs is essential. The identification of candidate pigs for teaching feeding behaviour to is a high priority during the first few days after weaning. This is an area of pig management that requires astute observation of pig behaviour. Pigs that are eating well will begin to have round abdomens, whereas pigs that have not begun to eat will be gaunt. With proper management of the nursery, the number of pigs requiring extra attention will be limited to 2 to 4%.

Nursery feeding programs

We adhere to three key concepts when formulating diets for the weaned pig. First, the economics of today's swine industry dictate that we must adjust pigs to the simplest and relatively lowest cost diets (i.e., grain and soybean meal) as quickly as possible after weaning. Second, we must remember that the newly weaned pig is in an extremely energy dependent stage of growth and that maximizing feed (energy) intake is essential. Third we must remember the digestive physiology of the pig and formulate the initial diets with highly digestible ingredients that complement the pattern of digestive enzymes secreted pre-weaning.

For many years we have focused our attention on complex and expensive Segregated Early Weaning (SEW) and Transition diets typically fed from weaning to 7 kg bodyweight. These diets have relied on relatively high amounts of specialty protein sources such as spray-dried animal plasma, spray-dried whey, fish meal, and blood meal. The reason for such high amounts of these ingredients were first to stimulate feed intake, but secondly to provide enough lysine and other amino acids to minimize the use of soybean meal to no more than 12% of the diet. Typical lysine concentrations of these SEW and Transition diets were 1.7 and 1.65% total lysine, respectively (1.56 and 1.50% standardized ileal digestible lysine). However, these diets were formulated for pigs that are approximately 3 to 6 days younger and at least a kilogram lighter than pigs weaned today on many farms. Therefore our research has focused on re-evaluating lysine and other amino acid requirements and testing new specialty protein sources for weaned pigs. The results of these studies has led us back to our previous phase 1 diet to replace SEW and Transition diets.



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Our research suggests that we can slightly lower lysine levels in our first diet and as long as lysine is adequate in the phase 3 diet, performance will not be affected compared to pigs fed typical, high lysine diets. The second ramification is that with the ability to

"We can slightly lower lysine levels in our first diet and as long as lysine is adequate in the phase 3 diet, performance will not be affected"

formulate the first diet fed post weaning to a low lysine level (again maintaining adequate lysine levels in phase 3), we don't need as much of the specialty protein sources, hence saving diet cost.

New protein sources for weaned pigs

The second area of research was to evaluate new protein sources for weaning pigs. It appears that two options exist: crystalline amino acids and intestinal peptide protein sources. The results of our studies suggest that, when formulated properly, crystalline

amino acids can replace some of the more expensive specialty protein sources in the diet such as fish meal.

A second alternative to fish meal is the use of intestinal derived protein sources such as DPS 50 (Nutra-flo, Sioux City, IA), and Peptone products (PEP 2+, Pep-NS, Tech-Mix, Stewart, MN.). Either of these three protein sources has been shown to be effective replacements for fish meal in phase 1 and 2 starter diets.

Typically, 20 to 23 kg of phase 3 feed is budgeted for nursery pigs, thus, cost of this diet is critical to minimize total feed cost while maximizing performance in the nursery. Specialty ingredients, such as spray-dried blood meal, fishmeal or dried whey are cost-prohibitive because research has failed to indicate improved

growth performance from feeding such ingredients in phase 3. This diet should resemble a grow-finish diet, which in most cases will be a simple grain-soybean meal diet.

Conclusions

In conclusion, the basic concepts and management practices for feeding older-weaned pigs are not different than those for younger weaning ages. Intense management of newly weaned pigs to get them started on feed as soon as possible is critical to the success of the nutritional program. Ultimately, producers who have high nursery feed intake, follow strict nursery feed budgets, and use high-quality ingredients will also maximize profitability. ■

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BREAKOUT SESSION

Curing our labour pains – Finding the ag workers of the future

Summarized by Marvin Salomons, Salomons Group Solutions

Opposing strategies in solving labour shortages

Labour is a significant cost of producing a pig in Canada. Following feed, the cost of having staff ranks a close second. Over the past years Canadian farms have generally become larger and the management of pigs on these farms more challenging and more technical. In many parts of Canada there continues to be a lack of interest in working on a pig operation or seeing this as a challenge or as a good future. Most unemployed people have little desire to work on local farming operations and for today's youth working on a farm is often a low-choice career path. This situation appears to be even more prevalent for the pork industry. As a result producers have found it challenging to recruit and retain suitable employees.

Differences do exist from province to province. In Alberta for example, non-skilled workers are sporadically available but highly dependent on the economic situation and labour demand within other sectors, such as the oil industry. Skilled pork technicians remain an even scarcer commodity. On the other side of the country such as in Quebec the issues can be quite different. Higher unemployment rates combined with local social and language culture influences encourage the unemployed and new high school graduates to seek out local jobs and long-term successful careers in pig production. It appears that Quebec producers are finding it easier to find and retain workers, without going outside the Province to recruit. On the other hand in Alberta, like most parts of western Canada, the best recourse in recruitment is sourcing foreign workers to fill the vacant jobs.

Two pork production companies presented these two opposing positions in a breakout session. First, Mark Chambers, Canadian Senior Production Manager with Sunterra Farms headquartered in Acme, Alberta, talked about the issues in recruiting foreign workers for their swine farms. Sunterra's operations consist of one Alberta processing plant, nine Alberta retail locations along with farm operations housing

5,600 and 7,200 sows in three Ontario and six Alberta locations, respectively. Most of the pig finishing is done in the USA. The company has 938 employees; 748 in retail, 120 in the plant and 70 on farms. Chambers noted the company currently has 86 temporary foreign workers (TFW) plus another 78 that came into Canada as foreign workers and have gone on to receive their permanent residence.

For Sunterra "foreign labour is a key part of our business" says Chambers. He listed all the common reasons most western producers face when sourcing workers from within Canada. "No one wants to work in agriculture, agriculture is not taught in schools and there are fewer people with farm backgrounds to draw upon. Young people have more choices today and most never think to enter the primary agriculture workforce." Recruiting from within Canada has not had great rewards for Sunterra. Chambers noted there is very little local interest from within Canada for the jobs they offer. "The ones that do start usually do not stay," says Chambers. He sees one of the main stumbling blocks as being the big disconnect between what young people have regarding the perception of pig farming and the reality of the business.

Speed bumps on the path of foreign recruitment

In Alberta the issue around trying to find local people to fill jobs became prominent in the late 90's and into early 2000's. Chambers noted that getting foreign workers at that time was a minefield of bureaucracy and hoops. The industry started working with Service Canada in trying to improve communications and streamline the process, providing job descriptions and wage grids acceptable to both sides. In 2004 the slump in the economy changed things. Chambers saw the Federal government position

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itself to protect Canadian jobs. He said, “we saw a sudden claw-back by Service Canada and less willingness to work with what we had agreed to as a framework for the pork industry.” Chambers noted the industry found the mandated wage rates varied across regions and were increasing significantly. He also noted it appeared their grid was also no longer being used. Chambers listed a number of items that were causing hardships for producers like increased processing times for labour market opinion (LMO) applications and the amount of time approved LMOs were valid. Chambers commented that these issues put the industry in a tight spot especially when the industry was going through some very difficult economic times.

“Producers were put in the difficult position of having to compete with their counterparts on the LMI mandated wages for foreign workers”

As previously noted, the industry saw government Labour Market Information (LMI) wage rates for skilled and low skilled NOC codes climb and vary widely across the Province. For low-skilled NOC 8431 workers it varied from \$13.99 to \$14.97/hr depending on the area you were located in the Province. “It was worse for skilled workers” says Chambers. LMI wage rates for skilled pork technicians under the NOC 8253 code ranged from \$15.18/hr in the Edmonton area to \$18.91/hr in the Red Deer area. “Producers were put in the difficult position of having to compete with their counterparts on the LMI mandated wages for foreign workers and having to increase salary levels for all their local hires just to keep all staff happy and willing to stay on the job”.

The issues spurred the Alberta pork industry, counterparts in other provinces and other primary agriculture sectors

CONTINUED ON PAGE 56

Table 1: Wage rates for LMI versus New Agricultural Stream Pilot C & D

Community/Area	Classification			
	NOC 8532	Unsupervised	NOC 8431	Supervised
	LMI Rate (\$/hr)	New Rate (\$/hr)	LMI Rate (\$/hr)	New Rate (\$/hr)
ALBERTA				
Athabasca / Grande Prairie / Peace River	15.46	10.42	15.93	14.28
Lethbridge / Medicine Hat	14.97	10.42	18.08	14.28
Fort McMurray Area	14.67	10.42	16.01	14.28
Edmonton	13.99	10.42	15.18	14.28
Red Deer	14.60	10.42	18.91	14.28
Athabasca / Grande Prairie / Peace River	15.46	10.42	15.93	14.28
Camrose / Drumheller	15.41	10.42	15.72	14.28
Cold Lake / St.Paul	15.83	10.42	16.53	14.28
Calgary / Banff / Jasper / Rocky Mountain House	15.27	10.42	16.39	14.28
MANITOBA				
Manitoba			14.80	14.28
Winnipeg	12.19	10.42		
Southern Manitoba	13.90	10.42		
Manitoba	13.30	10.42		
Selkirk Area	13.08	10.42		
SASKATCHEWAN				
Northern Saskatchewan	14.16	10.42	15.30	14.28
Regina Area	14.77	10.42	15.30	14.28
South-West Saskatchewan	14.90	10.42	15.32	14.28
South-East Saskatchewan	14.80	10.42	15.00	14.28
Saskatoon and Rural West	14.46	10.42	15.32	14.28
Northern Saskatchewan	14.16	10.42	15.30	14.28

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to work together. “We saw what the Alberta beekeeping industry was able to do with Service Canada requirements in getting more reasonable starting wage rates for foreign workers so we wanted the same for our producers”. It was not an easy route to follow. It was fraught with setbacks and roadblocks.

The industry did not give up and collected the necessary ammunition it needed to show how the LMI rates were far different from what producers were offering and could afford to pay. In the end several meetings, supported by various industry partners, with the Federal Ministers’ of HRSDC and of Immigration got some results. “The industry got some resolution,” said Chambers. Wages were brought in line to be more reasonable and LMOs were back to being issued for two years, which meant work permits could be issued for two years. Added to that a new wage rate table was created. “It was something we could work with,” added Chambers. The rate was now standardized across the Province and it was in line with what Chambers and the industry felt was more reflective of something producers could live with and offer to foreign workers. A new *Agricultural Stream of the Pilot Project for Occupations Requiring Lower Levels of Formal Training (NOC C and D)* saw NOC 8431 (low-skilled category) identified as supervised and NOC 8253 (skilled category)

identified as *unsupervised* (see Table 1). The wage rate that could be advertised in a new job ad and offered to a TFW candidate was now \$14.28/hr in Alberta” says Chambers. “I think you will see producers offering better rates than that” touted Chambers “but now they don’t have to pay the previous LMI rates that were so unrealistic”

Chambers finished up his presentation quickly outlining some of the added conditions producers will need to follow under the new stream. He also encouraged producers to carefully check out the HRSDC website to ensure they understand all the necessary requirements and processes when it comes to recruiting a TFW. Employers also need to ensure workers are covered when it comes to important items like housing or driver’s licenses. Workers need to feel they can come to work knowing they have the support of their employer and if they have the opportunity to stay in Canada for the long-term their employer will support and help them through that process. “Even if they are a TFW you need to make it a place they want to be and stay” summed up Chambers.

Recruiting locally – A success story

On the other side of Canada Normand Gagné, General Manager with Génétiporc Inc in St. Bernard, Quebec presented a different



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Table 2: Génétiporc 2011 Daily Pay Scale (\$/day)

	Probation			Apprentice		Permanent		Expert	
Farm Assistant			\$85.50	\$88.65	\$91.35	\$94.50	\$97.65	\$100.35	\$103.50
Worker	\$107.35	\$109.80	\$112.25	\$114.70	\$118.35	\$122.00	\$125.65	\$129.30	\$133.00
Section Leader			\$135.40	\$137.85	\$140.30	\$142.75	\$146.40	\$150.05	\$153.70
Team Leader			\$159.80	\$162.25	\$164.70	\$167.15	\$169.60	\$173.25	\$176.90

situation. Génétiporc has operations in many parts of the world including Canada, USA, Brazil, Mexico and elsewhere. Owned by Aliments Breton Foods Canada Inc., it has feed processing, slaughter plants and research facilities and farm operations. Its own production base markets about 350,000 hogs per year and is largely centred both east and west of Quebec City as well as in New Brunswick and Manitoba. The company has 15,000 in 14 sow barns with 95 staff, 40,000 nursery places in 14 barns with six staff and 15,000 finishing places in 12 barns with four staff. Another 24,000 nursery places and 105,000 finishing places are operated under contract.

Gagné noted the company has few foreign workers, most being local hires. “There are a lot of reasons why we can get locals to take our job offers,” says Gagné. “Primarily living in or coming to Quebec requires one to learn French in the first year. Also most of the people only speak French so it is harder for them to go to Ontario or Alberta and quickly fit into the job there”. One of the main things the company put in place a number of years ago was a pay scale program. Gagné noted this enabled the company to ensure pay equity across all their farms. Employees doing identical jobs on different farms now earn the same wage. “This eliminated a lot of the negative discussions and workplace problems when employees from different farms talked to each other,” said Gagné.

The company has also implemented a daily pay scale that includes four position levels with a corresponding pay grid that identifies a daily pay rate (See Table 2). Farms have four working levels: (1) *Farm Assistant* (full or part-time doing washing and various farm work) (2) *Workers* (full time playing an active role on the farm) (3) *Section Leaders* (full time, responsible for sections and supervise two workers) and (4) *Team Leaders* (full time, responsible for one to two sow barns as well as technical and economic results). “Added to that every position has four additional levels: probation, apprenticeship, permanent, and expert,” says Gagné. The system that has been set up makes it easier for Génétiporc to implement targets and track results. Staff know their responsibilities and what is required to do each task. Team leaders must, under supervision, properly manage the ratio of positions on the farm and ensure they keep within the salary budget. Gagné noted the company has a bonus system based on productivity and operating costs. “This gives us an additional guarantee of success in our recruitment program,” says Gagné.

A simple recruitment strategy

Génétiporc’s recruitment strategy is fairly simple. The company’s first goal is to attract local high school students to work weekends and holidays on the farms. Full-time work is

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guaranteed during the summer breaks provided the students work some evenings and weekends during the school year. "We try to make it easy for them by providing transportation and entice them into the prospect of a full-time job down the road," says Gagné. "This motivates them to pass through the probation and get into our system as quick as they can".

"During the interview process we watch a video with our candidates depicting the work they will be doing"

Another strategy targets secondary and first year college students. "We offer them the opportunity for an agricultural career on our farms and show them the benefits along with the potential for advancement," says Gagné. The company also targets non-agricultural students showing them that living on a farm can be a career opportunity with many advantages including cheaper living conditions. The company always encourages students to complete their studies and recommends local agriculture programs for those interested.

Génétiporc is proactive when it comes to recruiting. The company posts job ads at local schools as well as other

schools that offer agricultural worker programs. A referral system is also in place that pays current workers a bonus if a referred worker is hired and continues to work for a set period. "It's a solid recruitment and interview process," noted Gagné. "During the interview process we watch a video with our candidates depicting the work they will be doing. This ensures they are comfortable and we are not wasting everyone's time." Once the interview process is complete a "buddy" program ensures new workers are paired up with an experienced employee for a period of three to six months.

The recruitment strategy has been good for Génétiporc. Over the years the student recruitment program has supplied the company with a good pool of new employees. Gagné commented that 40% of active employees began as students. Employees like the program the company offers as it provides a good environment for advancement and movements up the pay scale. Gagne says the company is always looking for ways to improve and has even implemented a scholarship program for students in agriculture. "After they finish their studies we find they are ready and eager to enter higher-level positions back on our farms," says Gagné. "We always ensure we give feedback to our staff. They need to feel there is an interest and future for them at Génétiporc." ■

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BREAKOUT SESSION

Doing our share for animal care

Summarized by Geoff Geddes, Alberta Pork

The great politician and statesman Winston Churchill once observed that “democracy is the worst form of government in the world...except for all the other ones.” The same could be said for current efforts at animal welfare reform in the pork industry. From Denmark to Canada to Australia, everyone has a unique vision for the future of animal care, and is convinced that theirs is the best approach. While there is no consensus among nations or even within each country when it comes to welfare reform, there is an understanding that the alternative, to do nothing, is simply not an option. With that in mind, the “Future of Animal Welfare” session offered two perspectives on where we are, where we’re going, and how to get there.



Food company perspective on animal welfare

Leading off the discussion was Dutch agronomist Henrik Baekstrom Lauritsen, who currently serves as Livestock Procurement Manager for Tican in Denmark. Tican, a modern and globally-focused food company, has grown to be the country’s second largest slaughterhouse,

exporting approximately 85% of their production to 40 countries around the world. As a food company, Tican views increasing welfare requirements as both a competitive disadvantage and, in some cases, as a marketing opportunity.

The drivers

In Lauritsen’s opinion, there are four distinct groups driving reform both in Denmark and throughout the European Union:

1. **Media:** With their unquenchable thirst for conflict and controversy, they are the first to pounce on reports

of animal welfare “scandals”. By placing these stories squarely in the spotlight, often without proper context, they may provide a distorted view of the prevalence and severity of such incidents.

“Consumers opt for a more pragmatic approach: Find the cheapest price and take it.”

2. **Consumers/citizens:** Henrik views them as two distinct species, each with their own agenda. While citizens see themselves as principled idealists who base buying decisions on ethics and humane animal treatment, consumers opt for a more pragmatic approach: Find the cheapest price and take it.
3. **Politicians:** Always sensitive to current public opinion, they are often prone to kneejerk reactions without considering the scientific evidence or long-term implications. For example, the United Kingdom devolved from a net food exporter to a net importer due primarily to public pressure and its impact on government policy.
4. **Retailers:** This group continually looks to boost animal welfare standards, content to pass along the added expense to producers and consumers.

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Doing our share for animal care Continued

Welfare levels

According to Lauritsen, the pork industry in Denmark operates on five levels of animal welfare, each with its own standards for sows and growers:

1. General Danish Production

Sows:

- Stalls for dry sows are banned as of January 1, 2013, and 70% are already loose-housed.
- Rooting material must be supplied for all sows.

Growers:

- Cooling facilities are required, and no fully slatted flooring beginning January 1, 2015.
- Rooting material supplied for all growers.

2. UK Welfare Production

Sows:

- Group housing from weaning to 7 days prior to farrowing.
- Rooting material for all sows.

Growers:

- Cooling facilities required, and no fully slatted flooring as of January 1, 2015.
- Rooting material required.

3. Freedom Foods

Sows:

- Group housing from weaning to 7 days prior to farrowing.
- Sows must be able to move and turn during farrowing and until weaning.
- Crates are not permitted.

Growers:

- Lower stocking density.
- Use of bedding.
- Cooling facilities.
- No castration.

4. Free Range

Sows:

- Farrowing sows must be housed outdoors in huts.
- At least 1,000 square metres of grassland per sow.
- Minimum of 5 weeks of weaning.
- Dry sows and sows for service must be in groups with access to an outdoor area.
- Bedding must be provided.

Growers:

- 30% more area compared to general Danish production.
- Bedding must be provided.
- Access to outdoor runs.
- No tail docking.

5. Organic Production

Sows:

- Farrowing sows must be housed outdoors in huts.
- At least 1200 square metres of grassland per sow.
- Minimum of 7 weeks weaning age.
- Sows for service must be in groups.
- During summer dry sows must be on grassland and during winter they must be in groups with access to outdoor areas.
- Bedding and roughage must be provided.

Growers:

- Area requirements are 3.5 times more than general Danish production.
- No tail docking.
- Minimum 50% solid flooring.
- Bedding and roughage provided.
- Access to outdoor runs with a maximum of 50% of the area covered by a roof.
- No castration beginning in 2014.

Welfare challenge

While greater space and comfort provisions for animals sounds good in theory, the reality is that such changes come with a price tag. A recent Danish study estimated the extra cost of production per hog is anywhere from \$4.15 at the UK Welfare level to an astounding \$180.30 for the Organic method. As Lauritsen observed with his dry sense of humour, hogs at level 4 and 5 have a larger house than he does!

"Animal welfare will become a major factor in the future pork business, providing market access but not necessarily a profitable business"

For countries like Denmark, which is a net pork exporter, the increased cost of production that results from more stringent welfare requirements means losing competitiveness in markets where welfare is not a key selling point. At the same time, markets and customers that require higher welfare levels are usually not prepared to buy the whole carcass, placing many producers in an untenable position.

Future outlook

As we speak, new animal welfare legislation is being prepared, Lauritsen noted. EU producers will have to convert to group housing for sows by the end of 2012, and by 2020 Danish legislation requires all sows in the service unit to be loose housed. A complete ban on castration is likely to come into force in 2018, and the aim of the Danish government is to have loose housed farrowing sows before 2030.

The bottom line for Lauritsen is that animal welfare will become a major factor in the future pork business, providing market access but not necessarily a profitable business since demand and focus will differ from country to country.

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Doing our share for animal care *Continued*

Tackling the tough issues: CDC decisions for the future



According to a recent survey, 83% of pet owners call themselves “mommy” or “daddy”, 75% give their pets gifts, and 60% celebrate their pet’s birthday (and you thought you had issues). Why should we care? According to Florian Possberg, these stats reflect the growing humanization of pets among urban dwellers, a segment comprising 97.8% of the Canadian population...and growing.

As Chair of the Canadian Swine Health Board’s Pig Code Development Committee, Possberg is well positioned to address animal welfare from a Canadian perspective. What he sees is a society that has changed dramatically since the Code of Practice for the Care and Handling of Pigs in Canada was last updated in 1993. Animal care practices are the subject of public debate. Humane societies monitor and work to improve the lives of animals under human care, while radical groups question the necessity of using animals for profit or research.

Who will define animal care?

As in Denmark, this question is at the core of animal welfare reform in Canada. Will it be driven by farmers? Activists? Media? Celebrities? Politicians? Judges?

In Canada, the federal government has determined that all animal industries should develop and implement a code of practice. The National Farmed Animal Care Council has been

mandated to update the codes every 10 years and review them at 5 year intervals. This work is the responsibility of a code committee comprised of producers, industry representatives, researchers and humane societies.

The process

The process of updating the Pig Code in Canada started in 2010, with the update to become the Canadian standard by



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June of 2013. To date, the committee has identified 6 areas of sensitivity:

1. Controlling pain: A case study of castration
2. Methods of euthanasia
3. Pig space allowance
4. Sow housing
5. Social management of sows
6. Space allowance for sows

A committee of scientists has compiled peer-reviewed findings on each area to serve as a basis for the code, with three considerations for which animal care is analyzed:

1. **Biological functioning:** How the practice affects such things as growth rate, fertility, etc.
2. **Affective state:** Based on the premise that animals should be housed and handled so as to minimize suffering and promote positive experiences.
3. **Natural living:** Emphasizes the naturalness of the circumstances that the animal experiences and the ability of the animal to live according to its nature.

The Code Committee uses this information to draft the code, which then goes to industry and the public for review and comments. The final version becomes the *Code of Practice for Canada*. While unanimous agreement is difficult to attain, the code is a product of good faith efforts to understand and reflect the interests of all stakeholders. It strives to balance on-farm management practices with animal welfare, while also considering international influences and potential impacts to trade.

The updated code will definitely impact production practices and does not address all animal welfare concerns, but in Possberg's opinion, "it's a good start".

The Danish and Canadian approaches to animal welfare reform include both common aspects and distinct elements that reflect each country's unique circumstances and ideals. But ultimately, they are both motivated by an understanding that the status quo is no longer acceptable, and that changing with the times is crucial for the long term viability of the industry.

As that other great statesman -Yoda from Star Wars - put it: "Do or do not. There is no try." ■

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BREAKOUT SESSION

The right medium, the right message: Improving our public communications

Summarized by Geoff Geddes, Alberta Pork

Expert all aTwitter about Social Media

It's simple to access, easy to use, and reaches millions of people a day. Oh, and one more thing: it's free. No wonder presenter Jeff Schneider is so excited about social media as a communication vehicle for the pork industry. Schneider, who runs MarketingNinjas.com out of Edmonton, AB, discussed the ins and outs of social media and its potential for reaching a vast but – until now - untapped audience.

What is social media?

The term “social media” refers to the use of web-based technologies to turn communication into interactive dialogue. Three of the most popular forms are Blogs, Twitter and Facebook.

Why is it important?

In addition to providing an outlet for sharing your story and influencing opinions, social media offers free and

immediate access to a diverse audience. The numbers speak for themselves:

- Nearly 1 billion Facebook members, spending an average of 55 minutes/day online and sharing five billion pieces of information a week.
- 300 million users of Twitter annually, with an astounding 465,000 new signups each day.
- 126 million blogs worldwide.

Many anti-agricultural groups and organizations are very active in the social

media world. PETA, Greenpeace and others have large followings on Twitter and Facebook, making it doubly important that our industry establish a presence.

What sets social media apart from traditional forms of communication – such as TV, radio and billboards – is that it facilitates a two-way flow of information. Also, as Schneider points out, “instead of interrupting what people are interested in, social media has become the attraction that people actively seek out and trust as a credible source of information.”

Who is using it?

While the average age is 37, half of internet surfers 50 – 64 currently employ social media. Last year, there was an 88% increase in 50 – 64 year-olds using social media to update their status.

How does it work?

Building blogs

A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments and exchange messages. It is this interactivity that distinguishes them from other static websites.

To pork producers, blogs offer an opportunity to bypass the

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The right medium, the right message: Improving our public communications Continued

middleman (e.g. media) and share their thoughts, ideas and information directly with the public. For example, the blog foodandfarmingcanada.com targets people with little or no agricultural background, giving them a better understanding of farming industries and their issues.

Blogging basics

- Try to write on a regular basis, but only if you have something noteworthy to say.
- Focus on a topic that you are interested in and knowledgeable about.
- Share your opinions on pertinent issues as a way of personalizing your blog and putting a face to your organization, farm, product or industry.
- Use Twitter and Facebook to drive traffic to your blog.

How Tweet it is

Twitter is a social networking website that enables its users to send and read messages called tweets. Tweets are text-based posts of up to 140 characters displayed on the user's profile page. Tweets are publicly visible by default; however, senders can restrict message delivery to just their followers. Users may subscribe to other users' tweets—this is known as *following* and subscribers are known as *followers*.

Twitter tips

- Treat Twitter as a conversation designed to build relationships and establish connections. For example, Canadian Beef has designated a staff member to post tweets on everything from industry information to recipes to frequently asked questions.
- Use lists to manage your followers.
- Regularly monitor what others are saying about you, your issues and your industry.

Face-to-face-to-face...

If blogging is a chance to share *what* you know, then Facebook is all about *who* you know. Whereas tweets are generally seen by everybody, Facebook allows users to share information, photos and videos with their friends through personal profiles. Users can create and customize their own profiles, or browse their friends' profiles and write messages on their pages.

At the very least, Facebook is an easy way to keep in touch with friends, colleagues or clients, and to maintain a presence on the Web without building a website. Better still, you can take it to the next level by driving traffic to your website and creating a "buzz" around your product, service or organization.

Getting some Face time

- Make your profile stand out by keeping it informative and creative.
- Interact with visitors by responding to their messages and visiting their pages.
- As with anything, the more effort you invest, the greater your return.

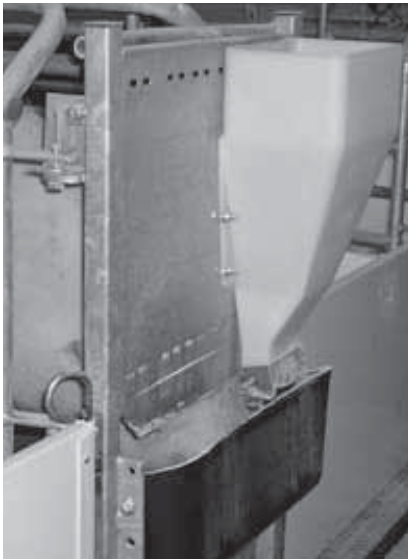
Points to ponder

Jeff Schneider concluded his presentation with the keys to social media success:

- Social media is not for everyone. You must be passionate to make it work.
- Know your audience and their preferences.
- Engage, engage, engage.
- Stress quality over quantity.
- Don't expect results overnight.
- The internet is in **ink, not pencil**. Once you've published a blog entry or posted to someone's site, there's no going back.
- If you do it, commit to doing it regularly and well.
- Think about what you want to accomplish and who you want to reach.
- Perhaps most importantly, don't be afraid. We were all newbies once.

In the end, making social media work for you is like any good relationship. If you're persistent, patient and passionate, there's no telling where it might take you.

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Crisis management: Clearing the air on animal welfare

With the ever-widening influence of the internet and social media in particular, responding to inaccurate or inflammatory images regarding animal welfare is more challenging, more important and potentially more beneficial than ever before. Drawing on a wealth of experience, Clover Bench from the University of Alberta and Lorna Baird of Alberta Farm Animal Care led an interactive workshop on the ins and outs of crisis management in the information age.

Let's ban driving!

This was the tongue-in-cheek theme of a bad driver compilation video that kicked off an entertaining session. Its purpose was to offer some perspective on the growing media frenzy surrounding animal welfare. As the speakers pointed out, driving is a heavily regulated industry that involves training, testing, licensing and registration, yet we still see shocking examples of inept drivers caught on video. Does anyone suggest that we ban driving as a result? No, because it is generally understood that recklessness behind the wheel is the exception rather than the rule.

So why do people who view an example of improper animal care assume that it represents an entire industry? According to Bench and Baird, many of the videos and images found on-line lack context or include misinformation about the practice in question. In some instances, livestock videos that have raised welfare concerns were obtained not through covert means but rather by well-intentioned industry sources (and you know what they say about good intentions!). Unfortunately, these sources did not provide enough clear communication about the nature of the video or clip being presented.

What's with all these images?

The problem of negative images is compounded by the prevalence of these images in the public domain due to a number of factors:

- The number of images accumulates over time as once they are in the public domain, they remain in circulation long after the situation has been resolved.
- Modern news media run minute-to-minute rather than day-to-day, so

news feeds are picked up faster and spread rapidly via social media.

- More people are becoming interested in where their food comes from and how it's raised.

Show and Tell

To assess and improve the audience's current knowledge of crisis communication, the speakers engaged them in a hands-

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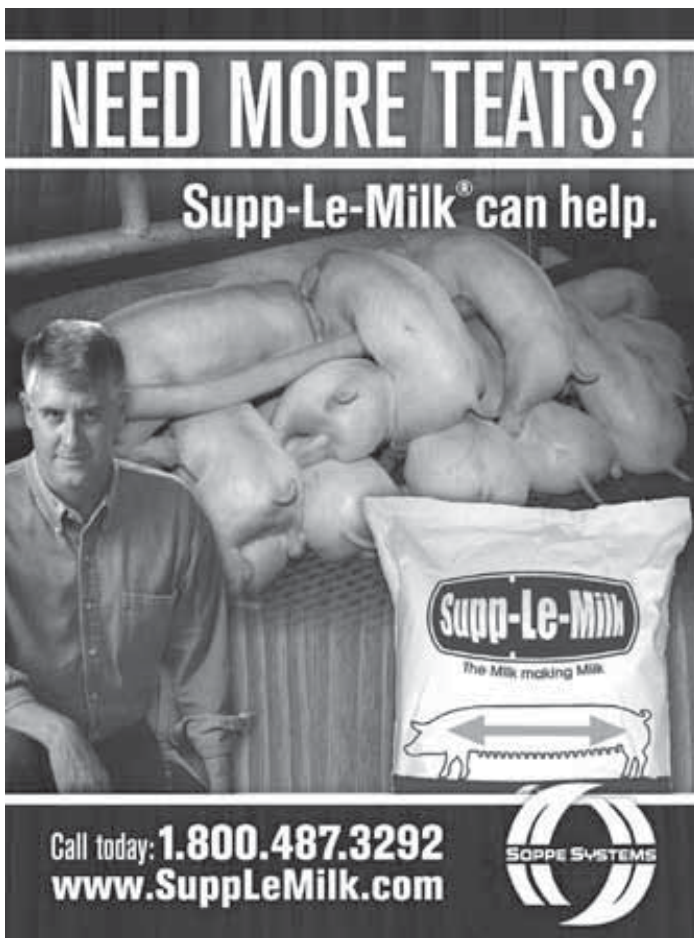
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The right medium, the right message: Improving our public communications Continued

on exercise. Participants were divided into groups and assigned a video depicting subpar animal care. They were then told to answer the following questions:

1. What is the impact on the industry? This could be assessed with either a broad or narrow scope, ranging from the impact on public relations to financial implications.
2. What would your response be? Think of three key messages. Can you do this quickly?
3. Where would you go to get your message out? How? Examples include news media, interviews, written communication, social media, commercials and educational displays, to name a few.
4. Identify key players/roles for distributing effective messages. Does your industry or organization have a designated spokesperson to deal with animal care and welfare questions as they arise in the public domain? Could the industry as a whole better coordinate with farm animal care organizations (e.g. AFAC, OFAC) to effectively communicate key messages to the public? Are members of the scientific community available and willing to provide additional information as needed?



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The session concluded with an overview of the keys to successful crisis response:

- Identify needs ahead of time and ensure that when a crisis occurs, you can explain how the situation is being resolved.
- Be clear on what you know and what you don't know.
- Don't deny, defend or cover up legitimate concerns. Acknowledge the public's concern about what they have observed and, if possible, refer to Canadian Codes of Practice or other well-known swine welfare guidelines which are scientifically based and have been peer-reviewed by the scientific community.
- Develop key messages regarding animal care and welfare practices ahead of time and re-visit them often to ensure they are easily accessible and current.
- Express your commitment to continual improvement. Consider incidents, when they do arise, as opportunities for further improvement through the gaps they identify.
- Forethought and planning are keys to successful communication. Hold practice sessions, consider videotaping yourself and encourage feedback.
- Be committed to open communication and be willing to answer questions.
- Proactively tell your story about how swine are raised in a factual and honest way, ideally to a wide variety of audiences.

Like it or not, the internet and social media train has left the station, never to return. How we adapt our communication, especially in regard to animal welfare, will determine whether we're conducting the train, enjoying the scenery or tied to the tracks. ■

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6.5	47.12	75.59	118.29
7	50.74	81.40	127.39
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5	1.5	1.0	0.6
5.5	1.4	0.9	0.6
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6.5	1.2	0.7	0.4
7	1.1	0.7	0.4
7.5	1.0	0.6	0.4

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BREAKOUT SESSION

Reducing the cost of herd health management

Summarized by Bernie Peet

Swine dysentery and other emerging Brachyspiras

After a decade or more of relative quiescence, swine dysentery has re-emerged in both Canada and the US in the last several years, according to Dr. John Harding from the University of Saskatchewan. Many of the cases, he notes, particularly in the USA, are associated with *Brachyspira hyodysenteriae* (Bhyo), the most common cause of haemorrhagic colitis in pigs. Swine dysentery can be an economically devastating disease. By recent estimations, the cost of dysentery is between \$7 and \$16 per pig, due to additional medications and/or loss of grow-finish performance, Dr. Harding says. He examines the causes, the effects and the treatment of this disease.

Symptoms of the disease

The main clinical signs of swine dysentery are bloody and mucoid diarrhoea in grower and finisher pigs. The severity of diarrhoea may vary and often mucous is more prominent than blood. While traditionally a disease of high mortality, mortality levels are more variable in recent outbreaks. Some strains of Bhyo, however, are more virulent than others and some strains may inhabit the intestinal tract but cause no disease at all. Swine dysentery is generally reported as a disease of finisher pigs and disease is rarely seen in pigs younger than 12 weeks. However, all pigs are susceptible to Bhyo. Diagnosis in sow herds is very difficult due to the more subtle clinical signs and low prevalence of shedding in the manure of adult animals. Breeding herds can

be a reservoir of infection and should be tested if swine dysentery occurs in downstream herds or flows.

The *Brachyspira* genus

One other *Brachyspira* species commonly affects pigs three months of age and older. *B. pilosicoli* (Bp) causes spirochetal colitis, seen clinically as a "wet-cement" type diarrhoea in grower and finisher pigs. At this time, it is not generally considered a production limiting disease so positive diagnosis is of little practical importance. Several other species may be detected periodically in pigs but their clinical significance is less certain.

Brachyspira species infect many animals including chickens, rats, mice, and water fowl; all of which can be potential environmental reservoirs of infection for pork farms. In addition, *Brachyspira*

species survive for lengthy periods in the environment and particularly in slurry. Bhyo is extremely contagious and difficult to eliminate from farms once infected. In theory, operating with high biosecurity standards should be sufficient to prevent the introduction of *B. hyodysenteriae*, but many high health herds have broken with swine dysentery, indicating lapses in biosecurity have occurred.

Re-emergence and identification of a novel *Brachyspira* species.

From the mid-1990's through 2003, swine dysentery was rarely diagnosed and some speculated that it had been eliminated from North America. Since 2003, the US south-east and mid-west have seen an exponential increase in swine dysentery cases. In western Canada, swine dysentery was virtually absent until 2010, but sporadic cases have been diagnosed in the last 12-15 months at Prairie Diagnostic Services Inc. Moreover, our research group at the Western College of Veterinary Medicine (WCVN) has recently investigated several cases of swine dysentery-like illness unrelated to Bhyo and Bp and have identified a novel *Brachyspira* species (temporarily named *Brachyspira* sp. Sask30446) in intestinal tissue and faeces of affected pigs. In affected farms, the bloody diarrhoea affects grower and finisher hogs and is clinically and pathologically indistinguishable from swine dysentery caused by Bhyo.

Diagnosis

The presence of clinical signs and gross pathological lesions confined to the colon and caecum is highly suggestive of *Brachyspira*-associated colitis, including swine dysentery. Additional laboratory

"Adequate sanitation is essential for prevention and helps to reduce infection pressure"

testing is required however, to differentiate *Brachyspira*-associated colitis from other intestinal diseases including salmonellosis and ileitis, the main differentials in western Canada. Numerous PCR assays are available; some specific to a selected species, and other generic to the *Brachyspira* genus. Testing faeces from normal or diarrhoeic animals is not always rewarding.


Control and treatment

Feed and water medication are the primary modes of treatment for herd outbreaks. Individual animals may also benefit from injectable medications if severe. Relapses are common after withdrawal of medications in both individual animals and in populations. Adequate sanitation is essential for prevention and helps to reduce infection pressure, but does not eliminate *Brachyspira* spp. from infected premises. There is presently no vaccine available. Once infected, rodent populations and slurry remain long-term reservoirs. Thus, the best cure is prevention through adequate external biosecurity.

Discussion and implications

Swine dysentery is rare but not absent in western Canada. Our current research indicates a compelling association between relatively high levels of *Brachyspira* sp. Sask30446 and colitis and additional work is underway to determine if *B. sp. Sask30446* causes disease. Commercial PCR assays used for the diagnosis of traditionally known *Brachyspiras* are unlikely to detect the novel species. If diagnostic results from appropriately submitted cases of bloody diarrhoea are negative for Bhyo, additional testing for novel strains should be performed.

CONTINUED ON PAGE 72



Pigs don't always tell you the truth about ileitis—and it could cost you big. This pig may look healthy, but it's lying. It has ileitis. No obvious signs, no subtle hints. In fact, 94% of herds in a recent study¹ had pigs with ileitis and no clinical signs. Do yours? Truth be told, the only way you'll probably find out is at market, when ileitis losses hurt the most. Subclinical ileitis reduces average daily gain by as much as 38% and worsens feed efficiency by up to 27%²—costing you \$2.83³ per head. Use Elanco Tylan, and make honest pigs out of the liars.

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¹ Armbruster, G. et al. Review of *Lawsonia intracellularis* seroprevalence screening in the United States, June 2003 to July 2006. *Proc. AASV*, 2007.


² Paradis, M. et al. Subclinical ileitis produced by sequential dilutions of *Lawsonia intracellularis* in a mucosal homogenate challenge model. *Proc. AASV*, 2005.

³ Data based on ADG and F:G differences over 21 days from treatment A, B, and F; base price of market hog of \$130/100 kg, carcass yield of 79.9%, index of 108, and nursery feed cost of \$250/tonne.

⁴ Guedes, R. Update on epidemiology and diagnosis of porcine proliferative enteropathy. *J. Swine Health Prod.* 12(3), 2004.

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Reducing the cost of herd health management Continued

Enteric diseases - Common infectious causes: what are the economic costs?

Enteric diseases in the growing and finishing herds can result in slower growth, poorer feed efficiency, higher death loss and lower carcass returns, in addition to the costs of treatment. Dr. Steven McOrist, from Nottingham University in the UK, summarizes the estimated economic impact of major infectious enteric diseases in weaned pigs.

Common enteric diseases

The most common global causes of infectious enteric disease in swine are:

- Swine dysentery due to *Brachyspira hyodysenteriae* group
- Proliferative enteropathy (ileitis) due to *Lawsonia intracellularis*
- Epidemic diarrhoea (TGE) due to porcine coronaviruses
- Salmonellosis, often in conjunction with PCV 2
- Colibacillosis due to enterotoxigenic *E. coli* strains

In many farm situations, these infections may be mixed, leading to an enteric disease “complex” similar to that for respiratory disease.

Economic analysis for diseases

The suggested costs for clinical and subclinical disease come in the following areas:

- The death or removal of a moribund pig, which can be assessed in two ways:
 - the lost or opportunity market value at slaughter, minus the feed costs saved in the period between death and slaughter age
 - the full costs of feed, housing and labour up to death or removal

- The additional costs of death for likely breeding pigs will include the lost opportunity of future piglets and genetic improvements
- A feed conversion problem is usually assessed via the costs of the increased feed and housing costs per pig actually sold
- Reduced weight gain in a grower pig can be assessed in two ways:
 - the cost of a reduced market weight, such as for a date-specific delivery contract
 - the increased feed and facility costs for holding pigs longer, such as for a predetermined market weight contract
- An increased variation in the weights of pigs sold can be assessed via an estimation of a standard matrix weight contract, which normally has penalties for light pigs. So for example, the costs for deviation from a premium rate for market pigs conforming to a range of 100-110 kg
- An increased back-fat depth due to any growth check suffered can be assessed via an estimation of a standard back-fat depth matrix, which normally has penalties for over-fat pigs.
- The actual costs of medications and feed additives used on the farm, aimed at improving these production measures
- Some indirect costs of a disease come in the forms of veterinary and feed investigations, and the laboratory costs of disease diagnosis

Some examples

Swine Dysentery

The economic cost of swine dysentery is considered the highest of any enteric disease – this is associated with its low mortality, high morbidity, marked depression of growth and feed conversion efficiency, and the costs of continual in-feed medication. A detailed UK study showed that endemic disease caused a rise in the feed conversion ratio by 0.58, with a 15 % increase in the feed and facility costs per kg liveweight gain and the costs of extra medicines of around CAD \$ 2.50 per pig.

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Unit shown is a model 36 in a typical setting. Other models and configurations available.

Current vaccines are not reliable and are not recommended. Prevention on farms with endemic problems consists of providing antibiotics in the weaner stages to reduce infection in pigs entering the grower phase. The agent can stay on the farm in carrier pigs and in rodents, so it is not possible to eradicate without a major cleaning and disinfection and rodent control program.

Proliferative Enteropathy

This disease is caused by the intracellular bacterium *Lawsonia intracellularis*. In contrast to *Brachyspira*, there appears to be a single pig strain of *Lawsonia*.

"With chronic ileitis the average daily live-weight gain is reduced by 37 to 42%"

The agent survives outside of the pig for up to two weeks in cold moist conditions. Chronic, acute and subclinical forms of the disease are all recognized, with around 95 % of all farms infected. Patterns of on-farm infection vary somewhat, depending on management systems – the infection tends to be

delayed until the finishing stage in clean multi-site systems, but occurs early in the nursery phase on less-clean, single-site farms. A useful and effective vaccine is now available, which has led to fewer cases, particularly of the acute form of disease, now occurring.

With chronic ileitis the average daily live-weight gain (ADG) is reduced by 37 to 42% and the feed intake required per kg of weight gain (FCR) is increased by 27 to 37%. Analysis of these negative impacts on slaughter weight, feed conversion efficiency, space utilization, and other morbidity effects as suggested above, were also calculated. A more exact calculation would depend on establishing an exact price for slaughter pigs, building pig spaces, labour, feed, contract specifications etc, for a particular farm or region.

The total losses due to ileitis on most farms could therefore regularly total CAD \$6 to \$7 per affected grower-fattener pig. An "average" farm producing 6,000 finishing pigs, with 30% percent of pigs with subclinical or clinical ileitis in the grower-finisher period and suffering say 10 deaths per year in the breeding herd, could suffer costs of around CAD \$45,000. ■

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BREAKOUT SESSION

Hedging your bets – Risk management

The Canadian pork industry can be viewed from both outside and inside as a business laden with potential risks, especially when talking about the dollars and cents of pork production and marketing. Knowing what the risks are is important but also understanding how to manage them and take advantage of programs and opportunities to mitigate risk is also crucial.

Participants at this year's Banff Pork Seminar had the opportunity to attend a breakout session delving into the topic of risk management. The session provided a lot of background starting with Joe Kerns, VP International Agribusiness Group, Ames, Iowa setting the stage by looking at market side risk and how it plays into overall risk management for producers.

Risk management in volatile markets

Kerns addressed the practical side of risk management in volatile markets. He presented details on the past history and the future of grain/oilseed markets, and price outlooks. In addition he reviewed the impact of various domestic and global policies as well as trends like bio-fuels on markets. Kerns sees ethanol production continuing to increase for the next two years before it plateaus and says there will be a need for more corn acreage to cover that demand. Recent droughts in the USA and Canada have had an impact on

corn stocks. Kerns noted the USA is feeding less corn and DDGS but growing more. "The demand in the USA for ethanol is still strong," says Kerns "and we have seen the lowest gasoline usage in nine years". Kerns noted that the elimination of the ethanol subsidy has put a cap on how much these plants are able to produce. "This has changed the market overnight," says Kerns.

Kerns presented information that shows the USA remains the largest exporter of corn followed in second place by China. He cautioned that if we need more corn we'd have to look at Brazil and Argentina for supplies. He pointed out that the price of corn and wheat has been tied since March 2011. Wheat is now corn and it will remain that way until we get more corn

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"It's the boringness of the soybean meal market that makes it a reason we need to watch it closely"

produced. Regarding soybeans, the USA continues to have soybean commitments to China but it has been the first year in the past five that won't see new records. "It's the boringness of the soybean meal market that makes it a

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reason we need to watch it closely” says Kerns. He summed up saying that markets are not perfect and it may be opportune to take the one that is misaligned.

Risk management at the farm level was also on the agenda in this breakout session. Frank Novak, Managing Director of Alberta Pig Company (APC) brought the topic down to the farm-level. Trained and working previously as an agriculture economist in a university setting for 10 years, Novak now oversees the risk management programs used by APC. He presented, as he called it, his biased view of what risk management is, what he thinks about it and how he implements it in the APC Sunhaven Farms production system.

Starting with risk management 101 basics

“Risk Management is a bit like sociology,” says Novak. “Everyone is interested in it but nobody is really sure what it is”. He added that once they know what it is they are not really interested anymore. This led him to his simple definition of risk as the probability of something bad happening. Novak says this is fundamentally different from uncertainty or variability. Novak went on to say the key word is “bad” with bad in the context of negative surprises or outcomes – like a lower price than what was expected.

The market place and the pig business have witnessed a lot of volatility over the last 10 years. For Novak and Sunhaven Farms it’s all about the balance sheet and keeping it strong. Sunhaven continually looks at risk management in a whole farm context. Novak sees risk as part of the conversation and says it always comes into play. Decisions are not made in isolation and producers need to be aware of all the sources of risk. They must understand risk avoidance, how to measure it, know their capacity to bear risk as well as how to reduce or transfer risk in their daily business. “We need to be able to measure risk and know what matters when it comes to taking on risk,” says Novak.

Novak outlined the risks for a typical modern hog operation (2600 sow system) outlining how “*risk management Sunhaven Farms style*” is always about growing and protecting equity. For Sunhaven, decisions or trade-offs are not evaluated in isolation. Novak makes sure that hog hedges at Sunhaven are not evaluated without consideration for grain positions. Sunhaven’s competitive strategy is to increase capacity to bear risk and includes:

- A conservative financial structure,
- Capturing available economies of size to increase revenue and decrease cost,
- New niche markets, alliances and business arrangements,
- Vertical integration and coordination,
- And, of course risk management initiatives.

Tough approach to market risk

The marketing side is important to Sunhaven. “We are a margin player whether we like it or not,” says Novak. Novak always knows the ROA and margins he expects for the farm. For Sunhaven the focus is on margins rather than prices. Sunhaven’s approach to market risk is to enhance the revenue side, distance itself from the commodity market and look at niche markets. Novak sees the path to market risk as a “stair step” approach to pricing and not jumping in all the way. “We stage ourselves in, move in 25% increments, and then forget about it,” explains Novak. “The use of market instruments like commodity futures and options along with currency forwards are commonplace in our business”.

Hog market risk management is difficult but it is manageable. Novak stressed the industry needs opportunities to manage market risk to enable it to be more competitive. He pointed out the lack of grain market risk management opportunities really puts the Canadian hog industry at a competitive disadvantage over American counterparts. Novak sees lenders playing a key role in helping fill the gaps rather than creating them.

“Lenders need to understand our business,” says Novak “and adopt consistent lending program guidelines when it comes

CONTINUED ON PAGE 76



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Hedging your bets - Risk management Continued

to financial risk management". He summed up saying risk management is hard work and a strategy that needs to be planned with a whole farm approach, prioritizing things based on what you know and don't know.

"Risk management is hard work and a strategy that needs to be planned with a whole farm approach"

Canadian approaches to risk management

A regular at the Banff Pork Seminar Kevin Grier, Senior Market Analyst with the George Morris Centre took his "kick at the cat" by reviewing the current risk management programs available to pork producers across Canada. For starters Grier questioned whether the so-called "risk management" programs currently available to hog producers in various parts of the country are truly risk management programs. "Are they really risk management programs or are they just tax dollars poured into the hog industry," says Grier. He followed the comment with what he sees as the true definition of risk management. For him it does not reflect what we currently see in our programs. For Grier risk management has to have common ground where the financial commitment is by the business that takes full gains or losses. Currently he sees governments putting dollars in but not participating in losses. Agriculture subsidies are now considered "business risk management", something Grier views as not totally correct.

The verdict on current programs

Grier reviewed four programs currently available to producers: (1) Agristability (2) ASRA (3) RMP and (4) HPIP. "The federal Agristability program works as intended, has worked well for hog producers and is trade friendly," says Grier. He pointed out that it is not need-based but just based on averages calculated around margins with reference margins. He

noted one drawback is that diversified farms may not receive payments, a reason the current structure may need to be reviewed and perhaps changed.

The ASRA (Assurance Stabilisation des Revenus Agricoles) program is available solely to Quebec producers. "It's the gold standard," says Grier. "Everyone in Ontario wants it". Grier noted that in theory it is balanced by payments but in reality it is seriously overdrawn having paid out well over a billion dollars from 2006 to 2010. "It is so lucrative that even in Quebec it is hard to tame it down," commented Grier. Grier summed up ASRA saying there is no question ASRA kept Quebec in the pig business and the industry is larger today than it may have been. According to Grier the new RMP (Risk Management Program) in Ontario is basically ASRA-Lite. "Ontario producers wanted ASRA but did not get it," says Grier. He hears producers calling this one wishy-washy. He pointed out that if there is a significant cancelling out between RMP and Agristability payments then the effect of RMP will have been greatly oversold. Grier cautioned that one major risk exposure for RMP is that the USA may see this program as countervailable.

The new Alberta Hog Price Insurance Program (HPIP) was launched to Alberta hog producers in the summer of 2011. Grier noted that producers essentially asked for it, the government delivered, and now it is being used. Grier noted that until now producer participation rate has been low as they see the premiums being too high - something he sees will be the criticism until the market tanks. Grier concluded that for now there are essentially no payments coming from HPIP and the premiums look like a waste of money to hog producers in Alberta. Still Grier sees HPIP as close to traditional risk management as we have been able to get.

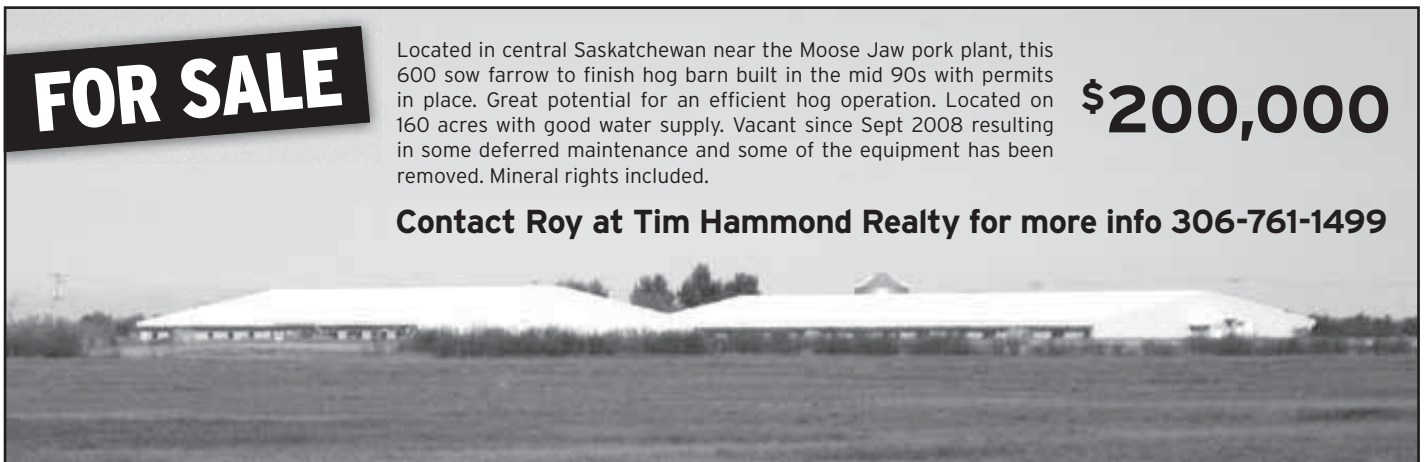
In summary Grier says these programs do nothing to help the industry adjust to global markets and encourages dependence and stagnation in the industry. He sees these forms of risk management programs as self-defeating in that farms will immediately capitalize benefits back into asset values. It's the old adage of "farming the government", summed up Grier. ■

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BREAKOUT SESSION

Breakthroughs in Canadian swine nutrition research

Summarized by Bernie Peet



Sustainable precision livestock farming: A vision for the future of the Canadian swine industry

Precision livestock farming is based on the integrated use of advances in animal sciences and in the new technologies of information and communication, says Dr. Candido Pomar, with Agriculture and Agri-Food Canada. Its main objective is to optimize animal production and the management of the productive processes, he suggests. It addresses the key issues in intensive livestock farming which are reducing feeding cost by improving feed and nutrient efficiency, improving production system sustainability by increasing profitability, reducing production footprints and increasing food safety through traceability. Dr Pomar looks at the key elements for the development of sustainable precision livestock farming and gives his vision for the future of the Canadian swine industry.

Precision feeding

In growing-finishing pig operations, feeding programs are designed to maximize population responses with minimal feed costs. However, nutrient requirements vary greatly between pigs within a given population and for each pig these requirements change over time following individual patterns. To optimize population responses, nutrients are provided at levels that satisfy the requirements of the most demanding pigs in the group, with the result that most of the pigs receive more nutrients than they need to express their growth potential. This is because, for most nutrients, underfed pigs will exhibit reduced growth performance and overfed ones will exhibit near optimal performance.


Precision farming or precision agriculture is an agricultural management concept that relies on the existence of in-field variability. Precision feeding is based on the fact that animals within a group differ from each other in terms of age, weight and production potential and, therefore, each has different nutrient requirements. Precision feeding involves the use of feeding techniques that allow the right amount of feed with the right composition to be provided at the right time to each pig in the group. Essential elements for precision feeding in livestock production systems include:

- precise evaluation of the nutritional potential of feed ingredients,
- precise determination of nutrient requirements,
- formulation of balanced diets that limit the amount of excess nutrients, and
- concomitant adjustment of the dietary supply and concentration of nutrients to match the evaluated requirements of each pig in the herd.

After the nutritional potential of feed ingredients has been determined, the nutrient requirements of animals


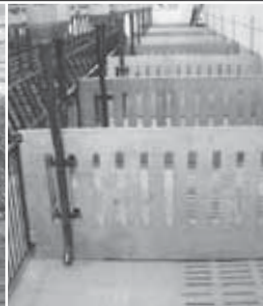
should be precisely estimated. Nutrient requirements of a given population are affected by factors related to the animal (e.g., genetic potential, age, weight and sex), the feed (e.g., nutrient composition, digestibility and anti-

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Breakthroughs in Canadian swine nutrition research Continued

nutritional factors) and the environment (e.g., temperature and space allowance). Because of the complexity of animal responses and the many factors affecting these responses, mathematical models are proposed to simulate animals' growth and estimate nutrient requirements.

"Feeding pigs with daily tailored diets reduced N and P intake respectively by 25% and 29%"

Adjustment of the nutritional content of the feed to match the requirements detailed above is required. Commercially, phase feeding is used to adjust the supply of nutrients to meet the requirements of a growing pig or a group. Phase feeding involves feeding a number of successive diets, each differing in protein, energy or amino acid content, to match the requirements of the pigs, normally at the beginning of each feeding phase.

Precision feeding overcomes the limitations of feeding systems in which optimal dietary nutrient levels are predetermined for specific feeding phases. In a recent simulation experiment pigs were fed ad libitum either according to a typical three-phase feeding program or fed individually with daily tailored diets

such as could be provided using precision feeding techniques. In the three-phase feeding program, all pigs received a common feed which was estimated to maximize population growth. In the individually tailored feeding program, each pig received daily a feed containing the estimated amount of required nutrients. Population protein and P requirements were established in this study to maximize population average body weight gain. Feeding pigs with daily tailored diets reduced N and P intake respectively by 25% and 29%, and the corresponding excretions were both reduced by more than 38%. Feeding costs were estimated to be reduced by more than 8\$/pig. It should be noted, however, that the highest performing pigs of the herd received more protein and P when fed with daily tailored diets than when fed in the three-phase feeding program.

Managing feeds and animals by advanced computerized technologies

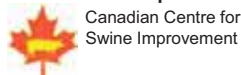
The proposed sustainable precision livestock farming system automatically collects in real-time individual feed intake and body weight information. This information is used to estimate optimal nutrient concentration of diets to be given daily to each pig in the group using new modelling approaches. To this end, a new automatic and intelligent precision feeder



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(AIPF) is under development at the University of Lleida, Spain, in collaboration with Agriculture and Agri-Food Canada. The AIPF identifies each pig that introduces its head into the feeder and then blends two or more premixes to deliver small meals providing the estimated optimal nutrient concentration.

Feeding pigs individually with daily tailored diets based on its own real-time patterns of feed intake and growth represents a fundamental paradigm shift in pig feeding. Besides animals being fed individually, the application of precision feeding techniques in growing-finishing operations implies that optimal dietary nutrient concentration is no longer a static population characteristic, but a dynamic process that evolves independently for each animal modulated by its own intrinsic (e.g., genetics, health, nutritional status, etc.) and extrinsic (e.g., environmental and social stressors, management, etc.) driving forces.

The system will know past nutrient intake and growth patterns of each pig. It will be able to:

- Feed pigs within a herd according to their daily individual nutrient requirements to:
 - reduce feeding costs by reducing expensive (protein, phosphorous and others) excess nutrient supply;
 - reduce feed fabrication, storage, management and shipping costs by using the same premixes for all farms; and
 - reduce nitrogen, phosphorous and other polluting manure constituents and thus the amount of land required for manure application.
- Manage feeds and animals by advanced computerized technologies to:
 - allow real-time off-farm monitoring of feeds and animals for optimal slaughter and production strategies;
 - reduce labour requirements and costs by automatic monitoring and management of feeds and animals; and
 - allow early identification of diseases and precise application of individual treatments, thus improving herd performance and reducing veterinarian costs.
- Allow easy application of optimal production strategies within each herd to:
 - automatically manage individual feed supply (e.g., ad libitum or restricted feeding) and composition (e.g., providing higher levels of phosphorous to future reproduction gilts, limiting or enhancing fatness to market pigs, etc.) to manipulate growth rate and composition of each pig to address specific production or target markets;
 - facilitate the evaluation of new feeds and feed sub products; and
 - facilitate the determination of nutrient requirements.

CONTINUED ON PAGE 80



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Breakthroughs in Canadian swine nutrition research *Continued*

Towards integrated nutritional management of growing-finishing pigs

Research at the University of Guelph is aimed at improving the efficiency of pork production, improving pork quality and safety, minimizing environmental impact and reducing reliance on in-feed medication. Dr Kees de Lange reviews three current projects that are helping towards the development of systems for evaluating financial and environmental impacts of alternative feeding strategies, in particular as it relates to Canadian feed ingredients and Canadian pig genotypes.

Impact of post-weaning growth performance on subsequent performance and carcass characteristics

The relationship between growth performance in the nursery and in the growing-finishing barn is of considerable practical relevance, but it is still a subject of considerable controversy. The common view is that post-weaning growth performance of pigs should not be compromised in order to optimize performance up to market weight. Various recent studies have shown that pigs can show partial or complete compensatory growth following a period of nutrition-induced reduction in growth rates. The latter suggests that feed costs for pigs during the nursery phase may be reduced, even if it results in reductions in growth rates, in order to optimize growth performance, nutrient use and profitability from weaning to slaughter.

An extensive growth performance study is under way to

investigate the effect of post-weaning (weaning to the end of nursery phase) growth rate of pigs as affected by diet complexity (simple versus quality and cost) and/or high versus low usage of in-feed antibiotics (chlortetracycline) on subsequent growth performance up to market weight and carcass quality. In this study pigs are fed according to one of four feeding programs during the first 6 weeks post-weaning. All pigs receive identical diets during the growing-finishing phase.

This research project is not yet completed, but preliminary results based on observations on about 300 animals show that pigs fed the complex diet or diets with antibiotics performed better during the first 6 weeks post-weaning; however, there was no difference in market weight at the same age among pigs or carcass characteristics among treatments. These findings indicate that feeding costs of nursery pigs can be reduced, without compromising subsequent growth performance and carcass characteristics.



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Estimating and manipulating the nutritional value of alternative pig feed ingredients

Given the recent increases in pig feeding costs it has become even more important to explore the nutritional value of alternative pig feed ingredients. Key concerns with using co-products from the human food and bio-fuel industries in pig diets are variation in nutritional value, relatively high fibre contents and impacts on carcass and pork quality. In Central Canada, these concerns apply in particular to corn dried distillers grains and solubles (DDGS). Because of these concerns, rapid means to estimate the nutritional value of individual batches of DDGS and relatively simple means to increase the nutritional value of DDGS and other co-products are needed.

A research project is under way to evaluate the nutritional value of a large number of corn DDGS samples, based on nutritional analyses, near infrared spectroscopy (NIRS) and objective colour measurements, as well as in vitro and in vivo nutrient digestibility and availability assays. Eighty-four DDGS samples have been collected from seven corn-based ethanol plants (12 samples per plant) that supply DDGS to Ontario. The results of these detailed analyses illustrate considerable variability in nutritional value among DDGS samples and show the importance of identifying simple predictors of nutritional value.

"Fibre degrading enzymes and microbial inoculants are likely more effective in liquid feeding"

Equations to predict various nutritional components such as dry matter digestibility, lysine content, lysine digestibility and available lysine content were developed. These provide a rapid method to estimate the feeding value of DDGS and show the limitation of only using colour to estimate the nutritional value of DDGS. Relationships with in vivo measures of digestibility are now being established.

Given the relatively high fibre content of DDGS, fibre-degrading enzymes and microbial inoculants may be used to enhance the nutritional value of corn DDGS. Fibre degrading enzymes and microbial inoculants are likely more effective in liquid feeding than in conventional dry feeding for improving the nutritional value of high fibre pig feed ingredients, such as corn DDGS. A study was conducted to determine the impact of liquid feeding DDGS steeped with enzymes and inoculants on growth performance, nutrient digestibility and carcass and meat quality in finishing pigs.

Steeping DDGS with enzymes, inoculants or a combination of both, increased lactic acid content in the liquid fraction. It also increased bodyweight gain and feed intake, increased apparent digestibility of ash and resulted in a numerical increase in apparent digestibility of crude protein. Hot carcass weight, back fat depth, loin depth and estimated carcass lean yield did not differ among treatments. This study suggests that the combined use of enzymes and inoculants is more effective at

enhancing the feeding value of high fibre containing co-products in liquid-fed finishing pigs.

Integration of cumulative knowledge in a user-friendly decision support system

Over time we have gained much knowledge about the nutritional value of Canadian pig feed ingredients, performance potentials of growing-finishing pigs and the response of pigs to varying nutrient intake levels. It is now well established that the optimum feeding strategy differs between swine units and should reflect cost and availability of pig feed ingredients, production objectives, pig types, carcass grading and payment schemes, as well as feeding management and housing conditions. Yet, it remains a challenge to effectively use this cumulative knowledge about nutrient utilization for growth in pigs in effective decision making on commercial swine operations.

New knowledge of nutrient digestibility and nutrient utilization in growing pigs will be integrated in existing biological and dynamic pig growth models. In the further development of these decision support systems there will be increased emphasis on user-friendliness. These systems will be made available for evaluating financial and environmental impacts of alternative feeding strategies, in particular as it relates to Canadian feed ingredients and Canadian pig genotypes. They can also be used to make feeding recommendations when insufficient information is available. ■



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International Round-up

UK welfare committee says government should pay for higher welfare

A recent report by the UK's Farm Animal Welfare Committee suggests that the government should help to fund improved animal welfare because it believes that market forces alone are inadequate to drive better welfare on the farm. The committee, which provides expert advice to government on farm animal welfare, says that the low profitability of livestock farming is deplorable because it forces farmers to base many of their decisions on cost alone.

"Welfare of farmed animals cannot be left to the free market, partly because of the way retailers drive down producer prices"

The report, "Economics and Farm Welfare" says that farm animals should, as a minimum, have a life that is worth living, and a growing proportion should have "a good life". However, it suggests, welfare of farmed animals cannot be left to the free market, partly because of the way retailers drive down producer prices. Even Freedom

Food products, produced to high-welfare standards defined by the RSPCA, are now suffering this fate, with some retailers beginning to use it as a basic requirement for which they will not pay a significant premium, according to British magazine Pig World.

The committee believes retailers should develop supply chains that give farmers the confidence to improve animal welfare. In particular it proposes using Common Agriculture Policy money to introduce a welfare stewardship scheme, similar to the existing Environmental Stewardship Scheme.

Many surveys indicate the public want to see improved welfare for farmed animals, "however, this does not appear in most cases to be translated into specific purchasing choices generating market demand," says the report.

Using less bedding in transit can benefit pigs and save cost

Researchers at Texas Tech and Iowa State universities have found that the pork industry can generally use less bedding year-round than it currently does while improving overall animal well-being. This could save the US industry an estimated \$10.1 million per year, they say.

The researchers looked at various rates of bedding in semi-trailers at different times of year and in different locations throughout the Midwest. This approach provided data representing cold, mild and hot weather.

Specifically, the research trials showed that groups of pigs headed to market can

experience lower mortality rates in warm weather and overall improved well-being year-round when less bedding is used in transport trailers. The current standard in the industry is to use four bales of bedding per semi-trailer.

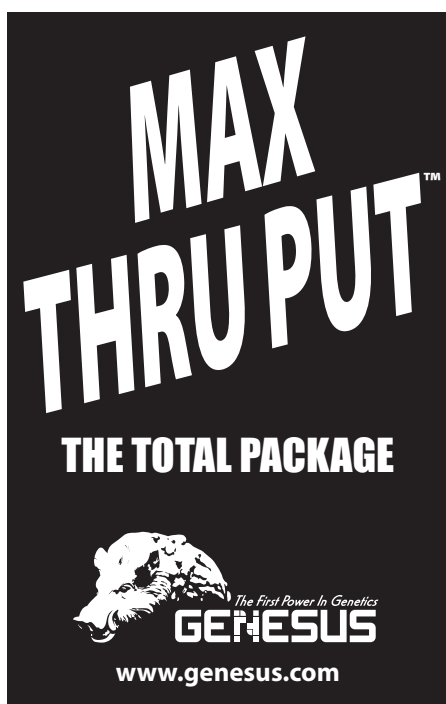
The study found that the surface temperature of the pigs changed with the air temperature and the increased surface temperature actually caused a negative effect on the pigs' welfare. In cold weather, there was no added effect to using more than six bales of bedding per trailer.

Freezing temperatures cause used, wet bedding on the trailer beds to freeze, which means pigs are more likely to slip on the ice, thereby creating more down pigs, note the researchers. In warm or mild weather, they found no added effect in using more than three bales of bedding per trailer.

They concluded that if the industry changed to using only three bales per trailer, it would create big savings with no change in welfare. Therefore, this is something the industry will need to consider carefully, they suggest.

Bright prospects predicted by Rabobank

Netherlands based international bank Rabobank predicts that 2012 will get off to a strong start by hog producers around the world, saying that first quarter prices will weaken, but bounce back strongly towards the middle of the year. "On average, prices will remain at elevated levels as high costs and disease problems in some regions prevent significant production growth," says the bank's Pork Quarterly report.



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Indicators for 2012 profitability are looking positive for the EU pork sector, says Rabobank. This is especially true at the farm level, it suggests, where reduced production should help improve upstream pricing power. Following a 5 percent decline in May to June, Rabobank expects the EU sow herd to show a 9 percent decline in the December release, resulting in a total EU production decline of 3.6 percent.

"Much of the outlook for 2012 will depend on pork export demand"

For the USA, while production will increase by about 2% in 2012, Rabobank says that futures markets offer producers a means of locking into positive margins for the year, possibly stimulating further modest expansion. It notes that much of the outlook for 2012 will depend on pork export demand. "Accounting for 22 percent of production in 2011, exports have become the incremental source for demand and a primary driver for prices," it says.

Rabobank expects Canadian pork production to be flat to slightly up in 2012. Canada's sow herd has stabilized at about 1.3 million head and Rabobank expects it to remain near this level for the foreseeable future. "To the extent that slight gains in production do occur, they will be the result of production efficiencies and not significant herd expansion," it says.

Brits highlight the Pork Promise

British consumers are now thinking more about where their pork comes from after a promotional campaign by the British Pig Executive (BPEX). The Pork Promise campaign, which was launched in autumn 2011, used outdoor posters, print and online advertisements, and engaging social media activity to reach consumers and highlight the reasons to choose quality assured pork.

Research showed increased awareness of quality assured British pork, identified by the 'Red Tractor' logo on retail packs, with consumers suggesting they are actively motivated to look for the logo when shopping, as well as putting Love Pork in

the top ten Facebook pages with the highest consumer engagement rate.

"Consumer response to the advertising message has been positive," says BPEX Head of Marketing Chris Lamb. There are high levels of awareness, understanding and likeability of the adverts, which included thought-provoking headlines such as 'Pork not Porkies' and 'Grill it before you buy it'. "Eight out of ten consumers said the advertising made them think where their pork comes from, 77 per cent think Red

Tractor pork has higher standards than other pork and over half are more likely to look actively for the Red Tractor.

Lamb said the social media element of the BPEX campaign had been a tremendous success.

"Love Pork has grown its consumer base on Facebook to well over 70,000 'likes' and has an engagement rate equalling those achieved by some of the UK's biggest consumer brands active on Facebook," says Lamb.

CONTINUED ON PAGE 84



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British study suggests supplementary rearing is cost effective

Increased litter size has created the challenge of maximizing piglet survival through a variety of management techniques and one option is the use of supplementary rearing. While the use of this method is not new, a key problem has been the difficulty of maintaining adequate hygiene where liquid milk has been fed. In addition, the high cost of milk powder has made the economics questionable. However, new products such as the Rescue Deck, with integrated milk mixing and delivery systems, make the technique more viable and eliminate some of the problems of previous, simpler, decks. Recent data from a farm trial carried out by the British Pig Executive (BPEX) suggests that using rescue decks can result in a 47% return on the capital employed.

“An extra 358 piglets would be weaned by the Rescue Deck system, almost seven extra pigs per week”

In the trial, piglets were moved into the Rescue Decks at 10 days of age and at a

weight of 4.4kg. They were fed liquid milk up to 3 weeks of age and then weaned onto solid feed. Thus, points out the BPEX report, they were nutritionally more advanced than suckled piglets supplemented with creep feed.

The Rescue Deck system raised numbers reared by 0.56 pigs per litter over the course of the trial period. “If the results of the trial period are replicated for a full year, an extra 358 piglets would be weaned by the Rescue Deck system, almost seven extra pigs per week,” says the report. Also, the overall quality of weaned pigs was improved by using Rescue Decks because there were less piglets suckling on ineffective back teats, particularly on older parity sows, it adds. It also appeared that the nutritional drain on the sow was reduced by having 15% of piglets transferred into the decks and this resulted in an increase in litter size in these sows’ subsequent litters. Although pigs from the Rescue Decks were slightly lighter at weaning, they grew faster in the first 4 weeks after weaning.

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A British study suggests that the use of Rescue Decks can result in a return of 47% on investment

the best from the Rescue Deck system, the report points out. “As always, attention to detail is imperative for best results and this is particularly important in hygiene and regular cleaning of the milk line system,” it says.

A detailed cost evaluation was carried out, which included the additional labour costs involved as well as the cost of milk powder, creep feed, cleaning chemicals, power and depreciation. Based on the trial results, the 358 extra pigs would generate an additional margin over all costs of £10,321 (\$16,370). With an initial capital investment of £21,631 (\$34,610), this results in a 47% return on investment. ■

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