

At a *glance*

an outlook on pork production



nutreco
Nutreco Canada Inc.

Winter 2010



Innovation Adds Value

- » Feeding And Managing The Gestating Sow
- » Innovation In On-Farm Ingredients
- » Translating Research Into Proven On-Farm Results



by **Dave Hartney**
Shur-Gain Swine Business Manager

Welcome

to the second edition of Swine Production At a Glance – Adding Value through Innovation. Our At a Glance publication will be going national as all Nutreco Canada Regions will be coordinating their information with both a National message and Regional focus. The purpose of ‘At a glance’ is to bring leading edge profitable ideas and solutions to our customer base.

Future issues of At a Glance will cover topics including production and management, new ideas and practices, profitable technologies, pork producer profiles and more. We feel now, more than ever, that we must work together in order to solve your production challenges and identify any opportunities for improvement, so that when we emerge from this very critical environment we find ourselves in today, we will be stronger, more knowledgeable and better prepared to take advantage of the opportunities that will present themselves.

In this issue we will be focusing on innovative ideas and the value that they can bring to your operation. The winter edition theme of At a glance is, – Adding Value through Innovation. To innovate is to bring in new ideas and new methods. We firmly believe that our industry needs to continue to innovate and adjust to be able to lead, both at home and globally. Research leads to new ideas, new ways of doing things and new profitability. Nutreco is committed to Research and Development, focused on improving productivity, lower cost, or managing risk.

Innovation Adds Value:

- › Translating Research into on-farm results
- › Innovative new products for Liquid Feeds
- › Innovative use of commodities on farm
- › Feeding and Managing the Gestating Sow
- › Effective use of watson® technology to determine optimum shipping weights
- › Customer profiles

We hope you enjoy this edition of At a Glance and we welcome any feedback you may have on the current and future content.

Good reading!



Feeding and Managing the Gestating Sow

Maxum MVP: Maximum Value Program

Supported in a two year study by strong technical teams and research facilities within Canada and also overseas, Shur-Gain and Landmark have summarized the best practices for sows in a new feeding program.

The results of these diagnostic studies led to practical recommendations for all stages of production including: nutrient requirements, feeding management and ingredient constraints. Where adequate data was not available, precise research trials were designed and performed on a large number of both young and mature sows in multiple locations. The resulting MAXUM MVP Sow Program includes cutting edge nutritional concepts from both North-American and European R&D and is backed by research and production data.

In this article we will focus on the feeding and management of the gestating sow, as the care and management of the gestating sow forms the platform of success for any sow operation.

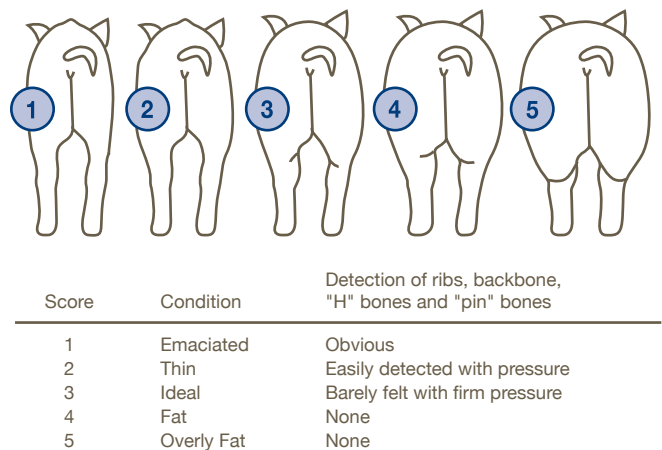
The overall goal of the gestation feeding program are to ensure that the sow is comfortable and maintains her pregnancy, to meet the sows' nutritional needs for maintenance, body reserve recovery and reproduction, and also to ensure that the sow is in proper condition to farrow easily and able to begin consuming greater amounts of feed in the farrowing crate quickly so the sows will not deplete their body reserves and will maintain litter weight gain.

Body Condition

Attaining and maintaining proper body condition throughout a sow herd is of the utmost importance in order to achieve maximum biological as well as financial performance. Evaluation of body condition should be a regular practice in

any sow herd. Currently the body condition is evaluated by measuring back fat thickness and/or visual scoring (1 to 5 – see diagram) with palpation at the hip. These measurements are recorded during the weaning to rebreeding period or up to a maximum of seven days post breeding. The target body condition score, using the visual assessment with palpation is 3.0 at breeding and 3.5 at farrowing (Prairie Swine Centre, 1995). Unfortunately though, there is a poor correlation between body condition score and back fat. A more accurate approach is to combine back fat depth and body weight to obtain estimates of how to feed the dry sow.

Figure 2. Body Condition scores of sows



Recommendations For Determining Body Condition And Back Fat:

- › Evaluation of body condition using electronic back fat measurement is preferred because it is less subjective and reduces the amount of variation between individual workers
- › Electronic back fat measurement will also allow quicker identification and control of fat sows and help with feed intake in lactation
- › The accuracy of body condition assessment is improved when it is related to body weight. Estimates of body weight can be attained using the KSU flank-to-flank method
- › Feed allowances will be based on the combination of three parameters: body condition score, back fat and body weight

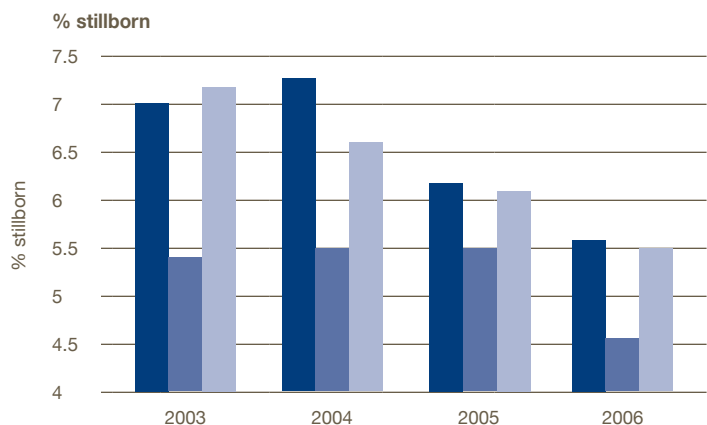
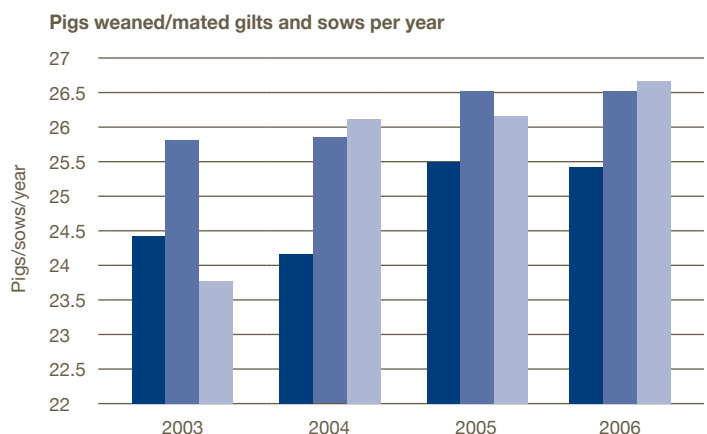
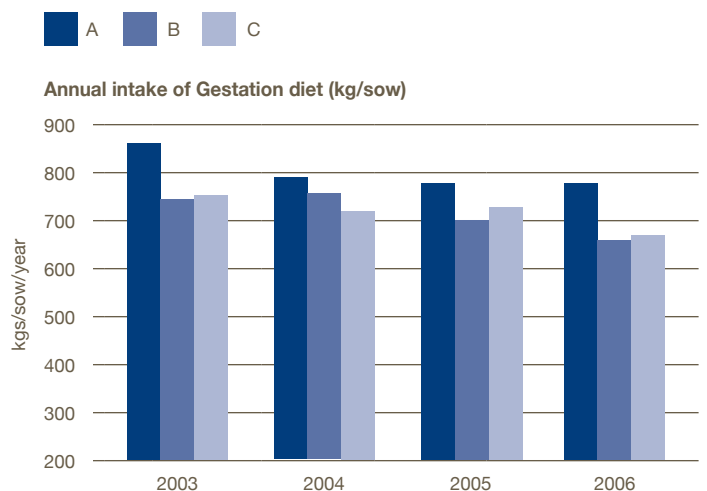
The KSU Flank-to-Flank method makes accurately determining the individual weight of a sow easier for producers. Visit www.asi.ksu.edu for more information.

Three graphs representing the results from three farms (A, B and C) that used the back fat and body weight method for four continuous years are shown to the right. Two of the farms had 1400 sows, one farm had 1000 sows. In each case the production systems were able to reduce the amount of gestation feed being used and ultimately reduce costs associated with previous over feeding. Production and lactation feed intake (data not showed here) was also improved as a result of sows being in proper body condition entering lactation. Sows in proper condition entering the farrowing room have less farrowing issues indicated by the corresponding reduction in the percent still-born over the four year period. Similarly, the improvement in the number of pigs weaned per mated gilt or sow is a direct benefit of proper feeding during gestation. These results provide a very compelling case for feeding to body weight and back fat.

Gestation Feed Allowance, Frequency and Form

The weaned sow should be fed ad lib (around 3-4kg/sow/day) of the lactation diet. The breeding sow could be fed 2.0-2.25kg of the gestation diet for three days post-breeding. Sows will ideally be in proper condition for farrowing and in order to achieve this there is a period of reconditioning during early gestation. During this period, additional feed allowances are provided using the

gestation ration and according to body condition, weight and back fat. This reconditioning period can vary between 30-56 days after breeding. For the remaining gestation period, sows will be fed gestation diet at standard amounts to facilitate feeding management and proper body condition.



Proof of Performance

FPO

Another consideration when feeding the gestating sow is the frequency of meals during the day. Feeding the sows once versus twice a day does not appear to change production parameters. The choice of feeding frequency is therefore a personal decision or according to equipment (size of canisters, automatic or hand feeding, through design, water level, etc). Arguments can be made for each feeding method. It can be argued that there is better sow comfort and satisfaction/satiety along with reduced incidence of ulcers when gestating sows are fed twice a day. It could also be argued that feeding twice a day increases the level of agitation and noise (stress) in the barn. Practically, feeding twice a day can be difficult if feed droppers are not accurate at low levels or are not calibrated on a regular basis. Again, it is therefore recommended that feeding frequency is a farm-based decision based on labour and equipment.

Gestation sows can be fed mash or pellet diets. In each case, the optimum particle size for best efficiency should range between 700-900 microns. Very fine particle sizes will cause ulcers and too coarse may be off-putting or decrease digestibility of the feed.

Nutrient Requirements

Energy and lysine requirements of gestating sows are rather fluid and will vary upon sow body weight, back fat feeding objectives and targeted weight and fat gain during the reconditioning period. Shur-Gain gestation diets are designed to provide optimum macro-mineral intake on a daily basis in order to meet the needs of both the sow and litter.

Each farm is different and has its own unique challenges and opportunities in production. Shur-Gain is dedicated to working with farmers in order to best optimize their production and enhance their bottom line through implementation of new research and technologies such as those which led to the new MVP sow program. To learn more about our sow feeding program, ask your Shur-Gain Centre of Excellence.

Ask your Shur-Gain Centre of Excellence about our sow feeding program

Rob Versteeg became a valued customer of Shur-Gain and Nieuwland Feed & Supply in 2008. In just over a year he quickly came to value the services and programs that Shur-Gain has to offer. "My Shur-Gain Territory Manager works hard to understand my business goals and needs and to come up with solutions and programs to fit them. I was raising niche market hogs on a different company's feed program and Shur-Gain was able to lower my cost of production by more than the \$20/pig premium I was receiving."

Impact 4e Easy Wean #2 complete feed is fed as a creep food. All other feeds for the 450 sow farrow to finish herd are manufactured on farm using Shur-Gain premixes: Maxum MVP RePro 41 premix for nursing sows, Maxum MVP Advance 38 premix for dry sows, Ultimix 4e Pif Starter Premixes 250 and 125, Dynamize grower premix and a customized Excel 26LP grower premix. Rob has endorsed the use of the MVP sow feeding programs including lactation feeding methods and a backfat feeding program for his dry sows. Instituting these practices has realized a 5% increase in farrowing rate and 0.5 pigs more born alive/litter. What Rob appreciates most about the feeding programs is the in-barn expertise to back up the products, for example, backfat measuring knowledge. "My territory Manager is well-informed and competent in everything from deworming shows to his use of Watson® and carcass data analysis. I also find him to be very trustworthy."

It has been a pleasure to serve Rob, Janette, Andrea, Ethan, Nigel and Evan. Shur-Gain and Nieuwland Feed & Supply thank them for their patronage and wish them every success in the future.





by **Insert name here**
Insert title here

Shur-Gain commodity blends: Innovation in on-farm ingredients

The Ontario standard for on-farm mixed swine feeds has traditionally been corn (energy), soybean meal (protein) and premix (vitamin/mineral/amino acids). However, in the last few years, co-products from the ethanol and human food processes have gained a greater presence on farm, replacing portions of the energy or protein needs. Still, corn and soybean meal have remained the main ingredients.

In the early summer of 2008, many producers had the daunting prospect of buying \$5-\$7 corn, \$500-\$600 soybean meal or investing in new bins to handle truckloads of DDGS, which were not that user friendly. So Shur-Gain and our dealers took action. We saw this as an opportunity to demonstrate the benefits of our versatile offering: premix-supplements-complete feeds. And feedback from our customers shows we made the right decision.

We were able to utilize our access to consistent, laboratory tested protein and energy sources to produce extruded and pelleted (free flowing) blends that we could balance to match our recommended corn-soy diets. By using a blend of ingredients, we could alleviate the risks of over feeding some higher-risk ingredients (such as Vomitoxin in DDGS), and make the most out of each ingredient's benefits, including fibre in wheat shorts. The larger inclusion and energy content of these blends allowed for some of our customers to purchase less corn, or even to sell some excess for profit.

We are able to produce a consistent-to-spec product from ingredients that can vary widely, and give our customers the benefit of cost averaging from ingredients that as we know were all over the board in costs.

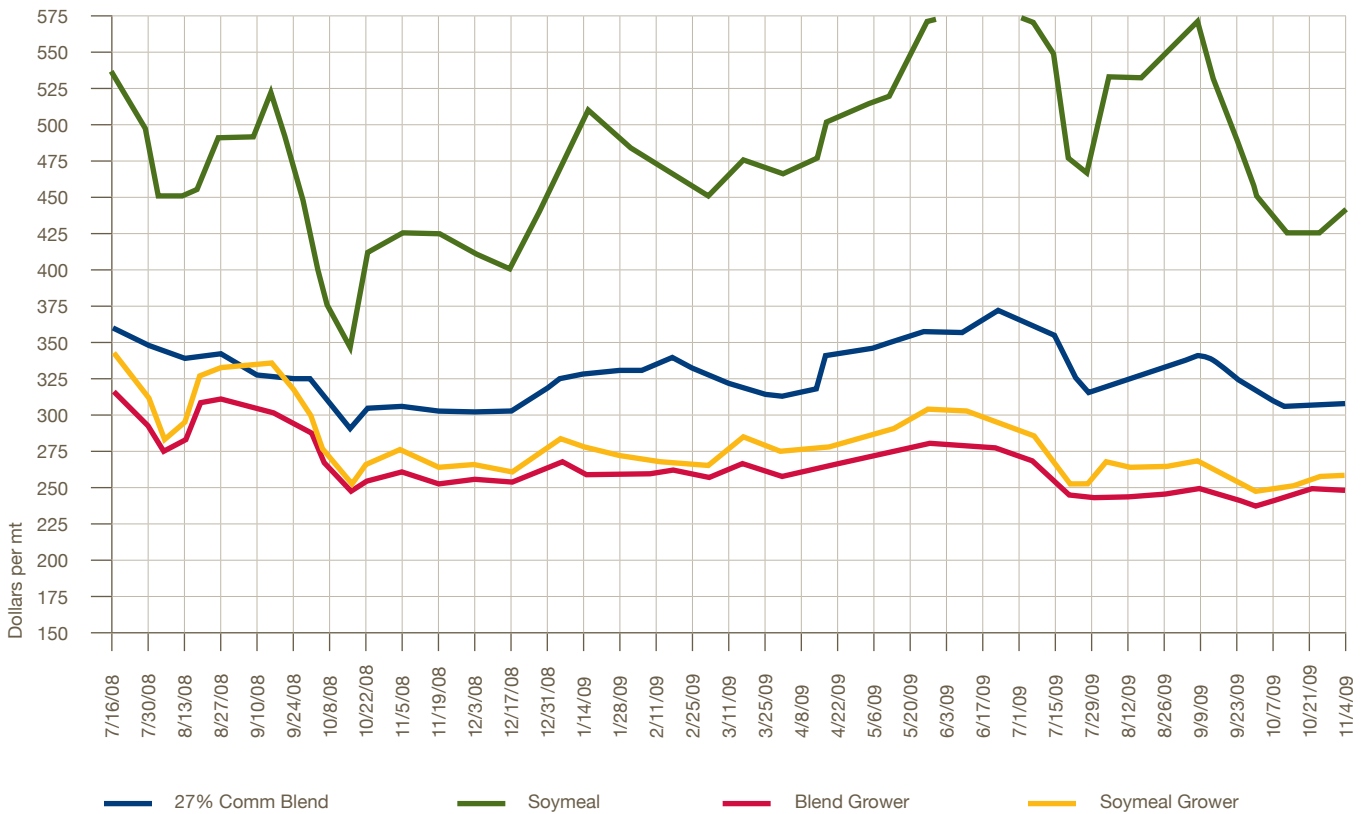
A benefit of the commodity blends is to keep the vitamin/mineral portion separate, compared to standard supplements. This allows customers to reduce the protein in diets through phase changes, and still maintain proper vitamin and mineral levels. That's a significant cost saving on the farm. In wean-to-market situations, we were able to simply replace the soybean meal in one commodity bin with the blend, saving the investment in new bins at a time when cash is key. Shur-Gain offers standard commodity blends, and based on needs, we can customize products to work with lactation, gestation and nursery diets.

By using our watson® Swine Growth simulator prior to making changes on farm, we are able to prove and reassure our customers these blends were economical. As well, we could show sustained or improved performance based on the ingredients' diversity.

Based on cash corn, I have tracked the cost of the commodity blend vs soybean meal, since July 2008. The Precision grower diet, fed from 40 to 75 kg weight, has averaged \$14.52 lower cost per metric ton. Spreads have ranged from \$2 and \$34, but always in favour of feeding the commodity blend.

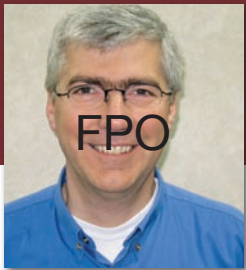


27% Comm Blend vs. Soybean Meal



For more information about how you can lower your cost of production utilizing Shur-Gain's commodity blends, please contact your local Shur-Gain representative or Shur-Gain dealership.





by **Insert name here**
Insert title here

watson®

Innovation with application

The Canadian Pork Industry is experiencing unprecedented change, the most dramatic of which is the current depressed cash market hog prices.

The Canadian Pork Industry is experiencing unprecedented change, the most dramatic of which is the current depressed cash market hog prices. Market prices and exchange rate are two factors affecting profitability, that are largely outside the control of producers, however, there are still factors on the farm that can be managed in order to control costs or improve revenue. The weight at which pigs are marketed represents an area that affects revenue and is completely within the control of producers.

In recent months the question “What is the optimum weight to market my hogs?” has become increasingly more common. The answer to this question is “it depends”. It depends upon several factors including but not limited to: the grading grid of the processor, the market hog price, feed costs, barn space and the production goals of the farm. There are many complex variables that interact and make marketing decisions a challenge.

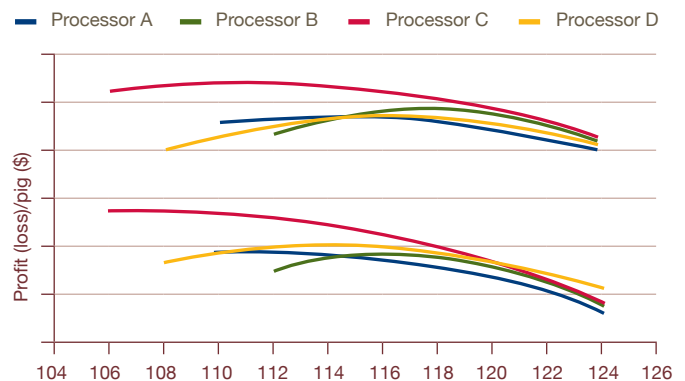
It is a difficult to assess or develop any marketing strategy without an advanced problem solving tool that allows you to better understand the impact that these interactions have on the production unit. *watson®* is a business tool, using the latest advances in science and technology, that has the ability to consider a multitude of factors in order to identify the areas where the most effective improvements can be made. It can help producers make decisions and respond quickly to changing business and economic environments.

We have spent a great deal of time helping our clients develop or evaluate their current marketing strategy with changing production drivers using *watson®*.

Following are some examples of the type of diagnostic work we are able to perform using *watson®* in order to assist our customers make informed marketing decisions.

The first example considers the challenge of marketing pigs at the current market price with varied feed costs and grading grids. The optimum weight for marketing can vary greatly depending on the key variables described above. In general, with lower feed costs as described for this situation, and the fixed hog price, marketing a heavier hog will improve revenue. More importantly, using *watson®*, a more precise marketing strategy can be determined for any situation. As the graph in Figure 1 indicates, the appropriate weight for marketing is highly dependent on the grading grid. There is a significant difference in the optimum weight range between processor B and processor C's grid regardless of feed prices. Processor B requires a 7% higher live weight compared to processor C in order to optimize revenue. Generating this information is important in order to ensure that revenue is optimized under any market conditions. Or, before deciding which processor or which grid to choose. Having this information, *watson®* is able to accommodate most grading grids to run simulations and predictions that will ensure you choose the proper strategy for your farm.

Figure 1: Optimum Market Weight, Hog Price (\$1.10/kg)



Low feed costs = \$30/MT; High feed costs = +30/MT
(Sources: Mercier & Lessard, 2006; Pouteaux, 2007)

Figure 2: Optimum Market Weight with changing production drivers

Grading Grid	Scenarios		Optimum Shipping Weights (kg)														
	Hog Price	Feed Costs	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122
Processor A	Average																
	Low	High															
	Low	Low															
	High	High															
	High	Low															
Processor B	Average																
	Low	High															
	Low	Low															
	High	High															
	High	Low															
Processor C	Average																
	Low	High															
	Low	Low															
	High	High															
	High	Low															
Processor D	Average																
	Low	High															
	Low	Low															
	High	High															
	High	Low															

Average = Hog Price = \$1.50, Feed Costs \$230-\$250/MT; Hog Price: Low = \$1.10, High = \$1.70; Feed Costs: Low = \$30; High = +\$30
 (Source: Ferguson, 2008 Banff Pork Seminar)

watson® can also be applied in a broader strategic sense for planning and evaluating a more diverse set of production drivers. Your marketing strategy will also change when market prices change. Figure 2 considers not only changing feed prices and grading grids it considers solutions for changing market prices with several “what if” scenarios. watson® is able to help generate guidelines that can be applied dynamically on the farm to aid in the marketing decision process in a proactive manner as market and production drivers change. As indicated by the shaded areas the optimum weight for marketing can vary greatly under different scenarios. Producing a marketing plan that covers multiple scenarios based on individual farm costs and variables will prove invaluable when managing the financial aspect of your operation.

watson® is an extraordinary management and resolution tool that enables you to better understand the factors limiting the performance on your farm and help you strategically plan your business and set specific goals. It is a true example of innovation with application.

Example: Losses associated with staying with constant market weight

Scenarios		Processor A		Processor C	
		Loss/Pig (\$)	Optimum Wgt (kg)	Loss/Pig (\$)	Optimum Wgt (kg)
Hog Price	Feed Costs				
Average		0	117	0	114
Low	High	-\$1.39	110-112	-\$1.61	106-109
Low	Low	-\$0.28	113-116	-\$0.33	109-112
High	High	0	115-118	0	113-116
High	Low	-\$0.33	118-121	-\$0.49	116-119

(Source: Ferguson, 2008 Banff Pork Seminar)





by **John J. Brennan**,
Vice President R&D and Technology
Application, Nutreco Canada Inc.

Translating research into proven on-farm results



For decades Shur-Gain has been committed to Research and Development (R&D) to support the Canadian swine industry. That commitment grew substantially when we joined Nutreco about 2.5 years ago.



Dr. Neil Ferguson

Under the leadership of Dr. Neil Ferguson, our Canadian R&D focus is on quantitative nutrition where we apply a dynamic swine growth simulation model (watson®) that defines genotype, environment, diet, health status, carcass grading grid and all input costs.

Based on these input-output relationships and a producer's objectives we optimize the production system. Compiporc®, our benchmarking program, is used to measure both on-farm results and key inputs to facilitate data mining and opportunity analysis. In 2009, fact-based measurement systems and benchmarking are absolutely critical and are especially powerful when used in conjunction with a scientifically robust model for opportunity identification. In 2010 we plan to make further substantial investments in both animal science and information technology to increase the power of watson® on farm.

New starter pig and sow programs are developed and validated at our research facilities in Quebec, Ontario and Manitoba, reflecting current genotypes, prevailing health status, environmental conditions and of course feed ingredients and additives. Changes in weaning age and enteric pathogen challenge require that we continually improve and rigorously validate our programs under controlled but practical conditions. In 2009 we are investing to fully understand starter program impact on overall animal performance to market under a diverse range of nursery pig health status.

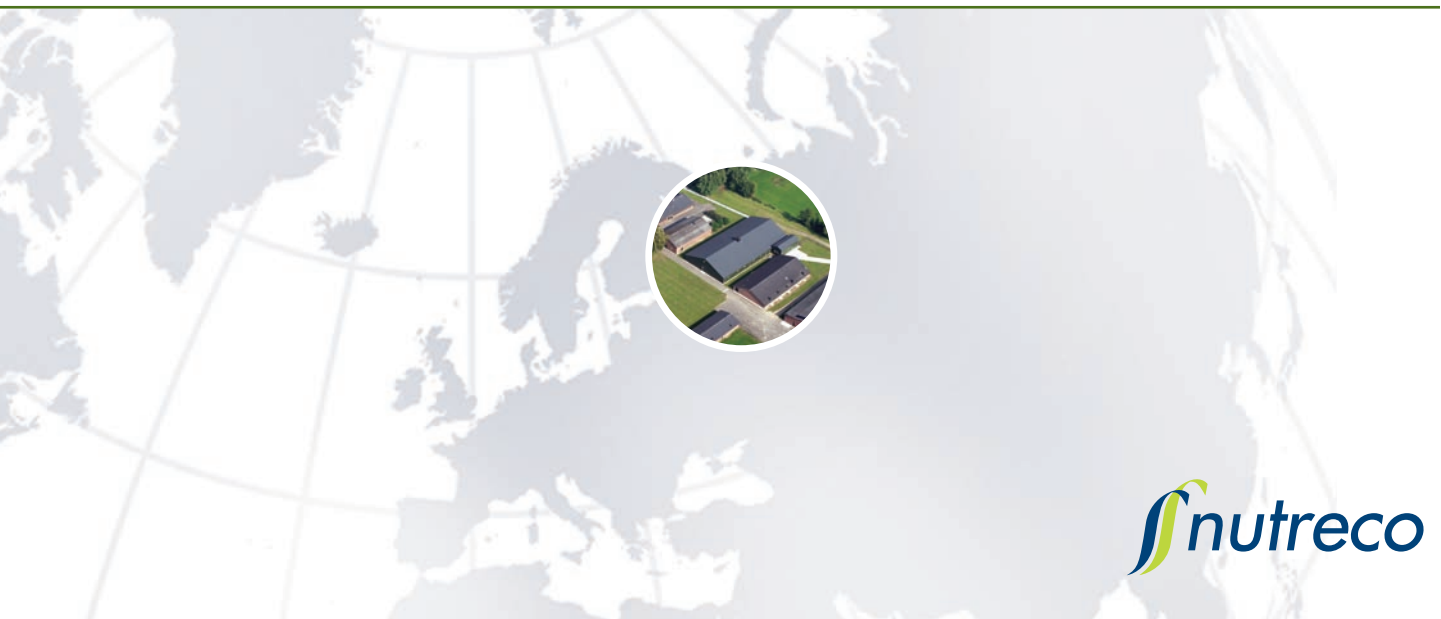
As part of the Nutreco family, we contribute to and receive a wealth of knowledge from a global network of research facilities, collaborating research institutions and companies. Hendrix UTD, our sister company headquartered in the Netherlands, has shared their extensive experience in liquid feeding systems, liquid co-products and production systems that exclude the use of antibiotic growth promotants. In Boxmeer, Netherlands, Nutreco has a Swine research Centre (SRC) that focuses on new concepts for supporting nutrition and health of pigs. At the same location, the Feed Ingredient Research Centre (IRC) has a focus on feedstuff evaluation with an emphasis on new or altered ingredients and rapid prediction of their nutritive value. The IRC has a large R&D program in the area of feed additives to improve gut health and reduce animal and poultry carriage of pathogens that may contribute to food-borne illness in humans. Dr. Andrew Pharazyn, based in Guelph, is part of a global team that works jointly with the



Dr. Andrew Pharazyn

IRC to maintain a global, predictive database for feedstuffs and share best practices. In addition we benefit from new technologies developed at a poultry research facility in Spain (PRRC) and an extensive aquaculture R&D complex in Norway, all with a nutrition, health and food safety emphasis.

In Nutreco Canada, each new R&D initiative is assessed based on its projected lifetime value to our customers, strategic value and probability of successful application on-farm. The process is managed by a team of swine business, R&D and technology



Michel Vignola

application leaders with a strong emphasis on speed to market. We source technology globally and apply it locally.

R&D only creates value when it is applied on farm and that's why we have one leader, Michel Vignola, who is 100% dedicated to swine technology application in Canada.

Michel participates in global innovation teams and continually learns from colleagues primarily from the Netherlands and Spain where Nutreco has extensive swine production and nutrition expertise. He also works closely with Ontario Swine Nutritionist Drew Woods, your Ontario swine team and Ontario pork producers to translate new technology into on-farm results locally.



Drew Woods

His role is to stay closely connected to our research centres and teams globally and to stay even more closely connected to you, our customer. Now more than ever our industry needs to bring new technology to the Canadian market very quickly and competitively for both differentiation and efficiency improvement. Nutreco's commitment has never been greater.



Proof of Performance

The Deetman Family - Henrike, Gake, Gerrit, Gerrie, Egbert, John and John Jr. have lived on their family farm near Kenilworth since 2004. For the last 2 years they have been valued clients of Shur-Gain and their local Shur-Gain dealer Nieuwland Feed & Supply.

John purchases the new Maxum MVP complete feeds for his herd of 500 sows. He comments, "Working with Shur-Gain's Maxum MVP sow feeding program has increased my productivity. Feed intake is up on the new MVP lactation ration." There have been several advantages for John in implementing the new sow feeding program. Farrowing rates have increased 10% and pigs/sow/year have improved by 2.3. John attributes these results to several factors, including the backfat feeding program he now uses in his gestation barn. His Shur-Gain Territory Manager consulted with him to come up with the program that would best fit his operation. This key change in his dry sow feeding practices has resulted in stronger heats at breeding time. John has also appreciated the in barn consultations with Shur-Gain on topics ranging from best practices for heat checking and breeding quality to batch farrowing and water quality. "My Shur-Gain Territory Manager works hard to understand my business goals and needs and to come up with solutions and programs to help my operation succeed. He is very knowledgeable, competent and a trustworthy source of information. I also find tools such as Compi-porc helpful in making informed decisions."

Shur-Gain and Nieuwland Feed & Supply thank the Deetmans for their patronage and wish them continued success in the future.



The Deetman family



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