

the INSIDER

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Born Winners!

Strong pigs from good mothers give the foundation for profit by all parts of the pork production chain and not just the piglet producers, Jascha Leenhouders of TOPIGS tells Ben Cardoso.

Ben Cardoso: I see that a big anniversary for your company comes in 2014, when it will be 20 years exactly since TOPIGS started intensive investigations into breeding to improve the vitality of young pigs. You yourself have been involved in these studies for more than 10 years. How has the information from this research helped the company's breeding work?

Jascha Leenhouders: Most importantly, the emphasis we now put on the special quality that we call piglet vitality is a direct result of the years of focus in our research and our breeding program. From our point of view it has given us a definite edge over our competitors by providing the basis on which we have built a highly effective breeding strategy to improve the production of strong, vigorous piglets. The genetic improvement from that strategy has since delivered some of the industry's lowest mortality rates, not only from birth to weaning but also in the grower and finisher stages.

Breeding for high and uniform birth weights means both better pig survivability and a reliable supply of pigs with higher daily weight gains. It also leads to greater uniformity at the finisher stage so that as many of the pigs as possible achieve full value by hitting the sweet spot on the packer grid.

Cardoso: What has been the effect on herd output?

Leenhouders: Examples can be found in the comparisons of commercial herd performance done in individual countries using data for 2012. In Brazil the results from over half a million sows on 850 farms showed that the TOPIGS-bred herds won an extra 3.2 weaned pigs per sow per year, mainly because of larger litters at farrowing and a pre-weaning mortality rate of only 7.7%. In the Netherlands, a similar number of sows and farms were involved in a comparison between the Top 20 performers among TOPIGS customers and the national Agrovision benchmark. Here, our best customers weaned 29.1 pigs per sow per year compared with 28.2 for the other benchmarked herds. Again the advantage came from having more pigs born alive per litter combined with a lower rate of mortality up to weaning.

The comparison in the United States in 2012 covered approximately 1.5 million sows in total, on 800 farms. The users of our genetics gained 3.5 more pigs weaned per mated female per year, with the help of bigger litters born and a better rate of piglet survival.

The American assessment also added a fascinating illustration of the way in which breeding to improve the survival of pigs can reduce the expensive leakage of numbers between birth and slaughter. The herds with TOPIGS sows started with an 11% advantage in total pigs born per litter and this increased to 12% when taking the number born alive.

By weaning their numbers were 15% better, which grew again to 17% at the time of transfer to finishing pens. By slaughter weight, they had 21% more pigs still alive! It gave the clearest possible illustration that our breeding for piglet survival also leads to lower finisher mortality.

Cardoso: From the research that you have done, do we have a clearer idea today about why some piglets die and others survive – and how this relates to their genetics?

Leenhouders: Yes, definitely. The long experience built up by TOPIGS on promoting piglet vitality has given us a rich source of knowledge on this question, more than for any other breeding company.

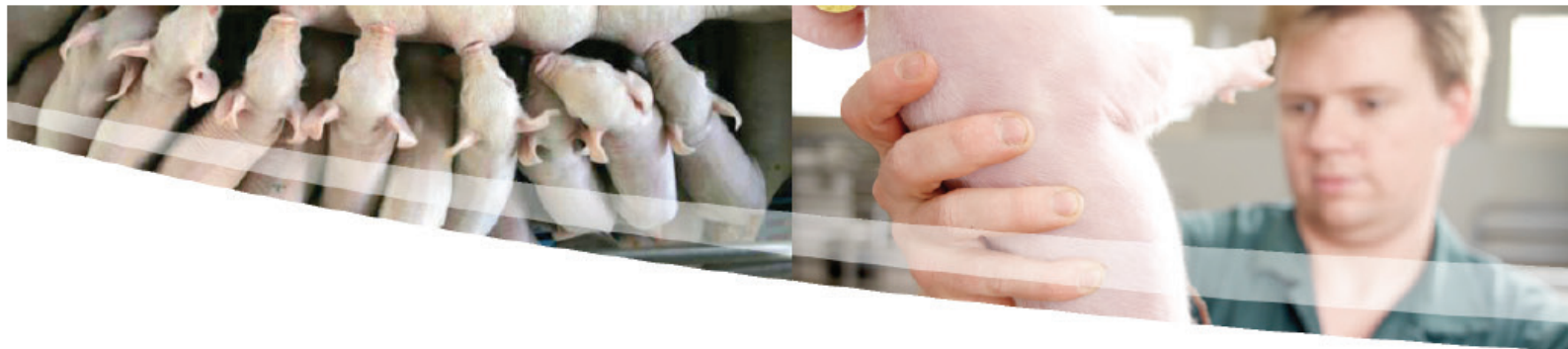
The first thing to say is that the survival chances of a piglet are of course influenced by factors in its environment such as the design of the farrowing pen, but other big influences come from their own genes and those of their mother.

The piglet's genes confer an inherent vitality which is separate from its birth weight. In fact, a point worth emphasizing is that breeding for piglets which survive does NOT in itself lead to heavier pigs at birth. Our selection relating to the genetics of survival results in the birth of a piglet that is more mature physiologically and therefore better prepared for life outside the uterus.

Weight at birth is a separate breeding goal, although undoubtedly important in its own right.

Cardoso: Have those years of investigation changed your view of the importance of birth weight?

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Leenhouwer: Yes – we have found that it is even more important than we realized! While we have demonstrated the value of the fact that we breed for improved inherent vitality, we also enhance the piglet's survival prospects by breeding for heavier and more uniform pigs at birth.

The individual's weight when born does make a difference, but we could see even from the earliest days of our research that there is also a big advantage to be gained from having uniform birth weights in a litter. It is an advantage that suits the operator of a finishing farm as well as a producer of piglets, because our evidence shows that selecting for increased uniformity of birth weights has positive effects on uniform finisher growth, all the way to market weight.

The growth potential of a pig is already established at birth. By making pigs heavier when they are born, we inherently improve their performance as a finisher.

We now routinely record the individual birth weights of more than half a million pigs per year as part of the information we supply to our Pigbase system, which has grown into the world's largest database on pig performance. These piglet weighings are essential to be able to select for survival, but they also provide us with data we can use in improving the within-litter uniformity of weights at birth.

Aiming for more uniform birth weights has helped us to reduce the number of piglets that die before weaning, even as the number born alive continues to increase year by year. What is more, our research has emphasized that the growth potential of a pig is already established at birth. By making pigs heavier when they are born, we inherently improve their performance as a finisher.

When we say that TOPIGS breeds for high and uniform birth weights, therefore, for our customers this means both better pig survivability and a reliable supply of pigs with higher daily weight gains. It also leads to greater uniformity at the finisher stage so that as many of the pigs as possible achieve full value by hitting the sweet spot on the packer grid.

Cardosa: How do the sow's genes influence piglet survival rates?

Leenhouwers: Everyone who produces piglets would agree that the other big factor in the survival story is the mothering ability of the sow. And this starts at the moment of farrowing. Beyond any doubt, an easier farrowing process improves piglet vitality. It gives the pigs the right start in life and they will profit from this constantly all the way through until they go to market.

As breeders, we believe firmly in the value of producing a sow that is easy to manage, in the sense of being able to farrow without needing a lot of outside assistance. It saves labour time and therefore money for

our customers as well as providing a better launching pad for strong, vigorous piglets.

A farrowing process that runs quickly and smoothly also has the extra benefit of helping to reduce the number of still-born pigs. This is reflected consistently in our excellent results for low stillbirth rates in the various country benchmarking tests. The American comparison gave one example when it reported that fewer than six out of every 100 pigs farrowed on our customers' farms in 2012 were still-born, compared with more than seven per hundred in other herds.

Cardosa: How do you translate a requirement for good mothering ability into genetic selection?

Leenhouwers: Our approach is to improve what we refer to as sows' weaning capacity, by selecting those that are able to wean all the pigs born. This is accompanied by a simultaneous focus on the number of good-quality teats so that the sow can nurse a bigger litter.

We are convinced that the piglets that are born should also be weaned, by the sows themselves. This is far more cost-effective and less labour-intensive for our customers than having a situation where piglets are kept alive only by supervising them constantly in the farrowing house.

Many more piglets are now born at each farrowing, when compared with the situation two decades ago. The sows need to be equipped to rear them. Fortunately, we now have genomics to help our breeding response. Genomic selection already helps us when applied to the traits of litter size and mothering ability in TOPIGS dam lines. There are early signs that it can also bring faster genetic progress in increasing their teat numbers so they can nurse more pigs.

Cardosa: Piglet producers will be particularly interested to hear that.

Leenhouwers: Not only them – it is a common mistake to think that the genetic improvement of reproduction and piglet vitality affects just one part of the production chain for pork. The added value is passed right along the chain.

Of course, our aim is to make sure that all of our customers profit from our breeding work, whether they produce piglets, belong to an integration, operate a farrow-to-finish farm, or specialize in raising meat pigs. Happily, everyone benefits from the birth of strong, healthy pigs with an outstanding chance of staying alive and the potential for rapid lean growth.

Here at TOPIGS we can claim with considerable justification that our breeding strategy on piglet vitality adds value not only between farrowing and weaning, but also in the stages of growing and finishing. The work on piglet survival leads to better-quality piglets and to lower mortality rates among the finisher pigs.

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You can also see that the importance of birth weight and uniformity extends well beyond weaning, because heavier newborn piglets ultimately take fewer days to market, with equal carcass quality, and more uniform litters give improved uniformity in weight up to slaughter. That helps to explain why TOPIGS sets as the goals for its program that the average birth weight should remain equal or increase while the birth weights within litters should be increasingly uniform.

Cardosa: How does litter size fit in with this?

Leenhouders: Naturally, it remains one of our central themes that we will keep adding to the genetic capability for number of pigs per litter. But our strategy is not to focus on the highest total pigs born. Instead, we concentrate on piglet vitality together with litter size and the weaning capacity of the sow, to obtain the most pigs weaned per sow per year.

The results achieved by our customers constantly demonstrate the value of setting pigs weaned as the target rather than pigs born. Although increases in litter size at birth are highly desirable, they mean very little if the pigs do not survive until they can be marketed at a profit. It is a point that could be remembered more often by people who buy their genetics only on the basis of litter size at birth.

We all need to be reminded from time to time that the bigger picture is the impact on the producer's income, costs and profitability after any change in the production process from birth to slaughter. TOPIGS believes in directing its breeding activities so that they lead ultimately to a continuous improvement in the efficiency by which the total amount of feed used by a herd for all its production stages is converted into pork delivered to the market.

This dedication to further improving the Total Feed Efficiency of customers' herds has many strands, but you can be sure that we will continue to put the birth of strong and vigorous piglets at the centre of our breeding goals. As the knowledge we have accumulated from our research over the past two decades has taught us, these are the piglets that are born to win!

Genes for Survival

Genetic differences in piglet vitality have a physiological background were found by Jascha Leenhouders in his PhD work. The net effect is that if you breed piglets to survive better until weaning, you actually breed for more mature piglets. This is indicated by much higher foetal cortisol levels near the end of gestation. Cortisol is known to have a stimulating effect on maturation of physiological functions and organs that affect immediate post-natal survival. For example, cortisol stimulates energy reserves in the liver and muscles of piglets at birth, giving them more energy to survive the crucial first few hours of life.

Studying the organs of newborn piglets with a high genetic merit for survival showed that they had heavier adrenal glands as well as heavier livers and intestines. The heavier adrenals were associated with the much higher blood cortisol values connected to the maturation of the piglet. Other physiological clues to genetic differences in piglet vitality were an increased placental blood circulation linked to an increased placental efficiency and also higher glycogen reserves.

TOPIGS Genetics South of the Andean Region

By Jose Cordoba
Country Manager – Mexico; Area Manager CA&C – Andina

Pig production in South-America is gaining traction, and not only in Brazil, but also in many other countries like Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, and even in Venezuela. Our associate ALIMUNDO, based in Santiago, Chile, and led by Sergio Torrealba, is penetrating aggressively the Southern part of the Andean region (Chile, Bolivia and Peru). For geographical reasons, TOPIGS and ALIMUNDO are supplying Bolivia from TOPIGS Brazil.



High quality N Line Boar in Chile

The supply for Chile and Peru comes all the way from TOPIGS nucleus farms in Canada and it is flown from Toronto directly to Santiago and Lima. Even though the freight cost is high, producers in these three countries appreciate the high productivity, easy management, and robustness of the TOPIGS' females, as well as the rapid growth, feed efficiency, yield, and robustness of our terminal boar lines. The Total Feed Efficiency (www.totalfeedefficiency.com) concept our program delivers is of great benefit to the producers.

In 2013, TOPIGS Canada successfully exported more than 300 GGP boars / gilts plus terminal boars to Chile and Peru. We are enthusiastic, and our expectation is that exports will continue growing in 2014 and beyond. TOPIGS is Progress in Pigs.



Unloading TOPIGS GGPs in Chile



TOPIGS Terminal Boars destined for Peru



Mar-Ke Semen Service



Mar-Ke Boar Stud

Mar-Ke Semen Service joined the TOPIGS USA family of boar studs in December 2013 when they received their first load of TEMPO and maternal boars. Mar-Ke is a commercial semen collection facility owned and operated by Marie and Keith Rithamel. Mar-Ke opened in 1995 with a 40-boar barn, but has since grown to 400 boars on two sites, each with its own work force and laboratory. Additionally, the business now includes Keith and Marie's daughter, Stephanie, and her husband Ryan Harvey. Mar-Ke is located near Sharon, Wisconsin, an area of low pig density, and has experienced NO health challenges since the business began.

Mar-Ke's top priority is to protect the biosecurity of their customers. Some of their current practices include:

- They raise their own grain and then grind and mix their own feed.
- Strict isolation protocol before boars are allowed in resident barns
- Separate trailers for quarantine and culls (no cull trailers on the farm)
- Routine monitoring of boars and facilities by Dr. Mike Nicholson of the Evansville Veterinary Service (PCR / ELISA testing twice per week)
- Routine monitoring of semen samples by Dr. Chris Kuster for concentration, motility, morphology, and bacteria

Their own courier service with temperature monitoring devices and knowledgeable delivery people to protect the product and assure our customers that they will get their order on time

The Mar-Ke AI stud is focused on supplying a quality product to producers. Keith and Marie are excited to be working with TOPIGS USA.



Mar-Ke AI Lab



Marie and Keith Rithamel





New Director of Technical Services



Mike Shaw

TOPIGS Canada is pleased to announce the appointment of **Mike Shaw** to the role of Director of Technical Services. This key appointment enhances TOPIGS Canada and TOPIGS USA teams. Mike will be responsible for the implementation of TOPIGS' genetic program and technical support for TOPIGS' customers in Canada and the United States.

Mike has broad experience in genetics, production and technical support having been with TOPIGS for five years as Operations Manager. Before joining TOPIGS, Mike was employed by Maple Leaf Foods where he held various positions with both GAP Genetics and Maple Leaf Agri-Farms, overseeing their genetic programs and nucleus and multiplication structures.

Mike's appointment signals TOPIGS' continued commitment to client service, and its dedication as an international leader, providing world class genetics and customer support to maximize results and returns. Mike will be the conduit between TOPIGS genetic development and technical support teams in Europe and the TOPIGS North American business, transferring knowledge and experience to the team and customers.

"I am excited about the opportunity that exists in this industry, and in particular at TOPIGS," Mike said. "I remain extremely focused on supporting both our genetic program and our customers as we continue to grow and expand. I am proud and happy to continue to be a part of the TOPIGS team."

Mike can be reached at mshaw@topigs.ca or (204) 797-2331.

New Business Development Representative



Glenn Kuhn

TOPIGS Canada announced today that **Glenn Kuhn** has joined its staff as Business Development Representative. This key appointment enhances the sales and service team of TOPIGS Canada, and Glenn will be based out of the Winnipeg office. In his new role, Glenn will develop sales in Manitoba and Saskatchewan. He will also be responsible for technical support to customers in Western Canada.

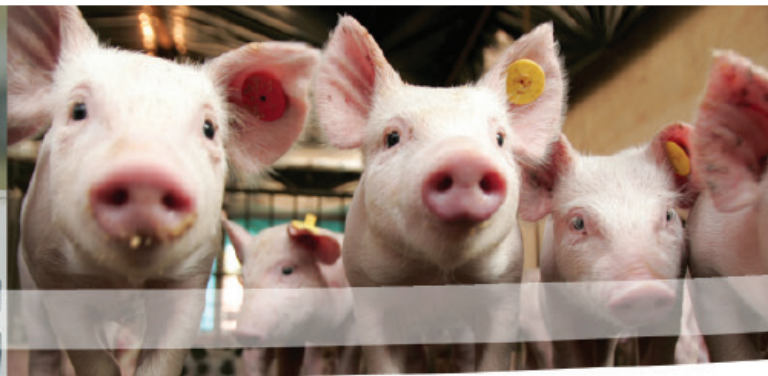
"Glenn has extensive experience and knowledge of swine production, bringing great value to the TOPIGS team. His sales and service experience with producers will also be a great asset, and we welcome Glenn to our team," said John Sawatzky, Sales Manager at TOPIGS.

Glenn is a graduate of the University of Saskatchewan, and he gained several years of commercial pig production experience before accepting a position as manager of a large genetic nucleus in Saskatchewan. Most recently, Glenn's role was in genetics sales and service. The years of experience he gained in various production roles, as well as customer sales and service, will be invaluable.

As he moves into his new role, Glenn looks forward to being part of the progressive attitude and excitement that is a TOPIGS trademark.

He may be reached by calling (204) 871-1448 or email: gkuhn@topigs.ca





TOPIGS AI Stations

TOPIGS terminal and maternal line boar semen is available throughout North America. Please contact TOPIGS or one of the suppliers listed below.

TOPIGS USA Boar Studs

AiPARTNERS

Morris, MN
Contact: Bruce Zierke
Lab/Office: (320) 760-3504
Email: bzierke@outlook.com

DUTCH SIRES

New Carlisle, OH
Contact: Gene Isler
Lab/Office: 937-846-1528
Email: piggene@aol.com

Power Point Boar Stud

Freeman, SD
Contact: Steve Schmeichel
Lab/Office: (605) 366-9532
Email: ssag@goldenwest.net

Mar-Ke Semen Service

Sharon, WI
Contact: Keith Rithamel
Lab/Office: 262-736-2345
Email: mar.ke@sharontelephone.com

TOPIGS Canada Boar Studs

Magnum Swine Genetics Inc.

Fort Macleod, Alberta
Contact: Andrew Buesekom
Lab/Office: (888) 553-4844
Email: andrew@magnumswine.com

Total Swine Genetics Inc.

Tillsonburg, Ontario
Contact: Stuart De Vries
Lab/Office: (800) 844-9913
Email: sdevries_shadeoak@sympatico.ca

Carlo Genetics Inc.

Ste. Anne, Manitoba
Contact: George Goossen
Lab/Office: (204) 355-4012
Email: georgegoossen@carlogenetics.com

C & M Genetics

Lucan, Ontario
Contact: Dr. Corneliu Oltean
Lab/Office: (888) 259-7594
Email: corneliu-oltean@cmgenetics.com



HOW TO PLAY

Please answer the questions in our Insider Quiz. All the answers are in this newsletter. Then fax, mail or email your answers, along with your name, address, and phone number. Entries are to be received by April 30, 2014. Winners will receive a \$20.00 Walmart Gift Certificate and the TOPIGS rep in your area will deliver the prize. Employees of TOPIGS and their subsidiaries are not eligible.

John Sawatzky, Sales Manager
(204) 981-0243

Gord Edwards, Ontario Sales Manager
(519) 440-8128

Rick Beunen, Ontario Business Development
(519) 317-7403

Ron Musick, Manitoba Business Development
(204) 223-3193

Glenn Kuhn, Manitoba Business Development
(204) 871-1448

Art Friesen, Alberta & Montana Business Development
(403) 382-9741

Craig Jarolimek, USA Business Development
(701) 866-4444

Brent Eyler, Eastern USA Business Development
(937) 733-8532

Jay Flora, Technical Service & Sales
(515) 297-1904

TOPIGS INSIDER Quiz

How many years ago did TOPIGS begin breeding for piglet vitality?

What year did Mar-Ke open their 40 boar AI stud?

Where is the Mar-Ke AI stud located?

How many GGP boars and gilts were exported from Canada to Chile & Peru in 2013?

Name:

Farm Name:

Address:

Phone #:

Email:

TOPIGS INSIDER Quiz Winners

Here are the winners from last issue: Jeremy Bergstrom (Bergstrom Precision Pork), Grove City, MN; Philip Kleinsasser, Delta Colony, MB; Aaron Brubacher, St. Jacobs, ON; Christina Hofer, Starlite Colony, MB; Joe J. Hofer, Midway Farms, MT; Ben Wurtz, River Road Colony, AB; Joseph Wurz, Kehoe Lake Colony, AB; Jeremy Kleinsasser, Springfield Colony, MB; Tracy Hofer, James Valley Colony, MB; Elie Maendel, Hidden Valley Colony, MB. Each winner receives a \$20.00 Walmart Gift Certificate. The TOPIGS rep in your area will deliver your prize. Congratulations!

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