

the INSIDER

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TECHART TOPIGS Breeding Program Part 2: better feed performance and heavier litters

By Arjan Neerhof

Arjan Neerhof M.Sc. is Director of Genetics and head of the Genetic Nucleus Group at TOPIGS in The Netherlands

TOPIGS breeding program focus on finisher traits while improving piglet birth weights and uniformity

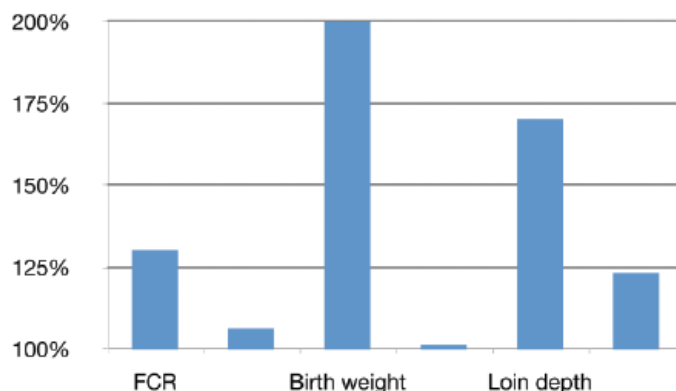
In a previous article I discussed how the improved results obtained by the TOPIGS breeding program over the five years from 2007 to 2011 have saved our customers an average of 1.75 Euros per pig per year on the cost of producing each pig to slaughter weight. The new selection initiatives we are putting into practice will win further significant reductions in the cost of production of the herds that use our genetics. These moves by TOPIGS extend our use of genomic selection to dam lines with effect from the middle of 2012, after introducing it for the breeding of finisher boars at the end of 2011. The result will be to make genetic progress both faster and more accurate while directing the breeding focus even more firmly onto total feed efficiency. In principle, the use of genomic selection information in dam-line breeding allows more and faster genetic progress to be achieved in areas such as litter size, birth weight, vitality and mothering abilities. Faster progress can also be made in the area of genetic improvement for finisher and slaughter traits in the dam lines. Genomic selection especially improves traits which have a low heritability. It also helps greatly with traits that are difficult to measure or are sex-limited, as well as those evident rather late in the pig's life such as reproduction values and meat quality.

Global trends influence breeding goals

In practice, however, we must always take international trends in pig production into account when setting our breeding goals.

One very noticeable trend has been the considerable increase year by year in the average number of piglets born per litter. At TOPIGS, we already assume a production level of 30.6 weaned per sow per year for customer herds in the next five years when we calculate the change in the production cost from each unit of change in a selection trait. Larger litters mean a relative decline in the economic value of increasing litter size when compared to the effect of an improvement in a finisher trait such as feed conversion. Our response at TOPIGS has been a decision to redirect part of the selection pressure away from litter size and more towards the gain and feed performance efficiency of the growing-finisher pig. It means that the target will be to keep the annual rate of improvement in litter size at about its present level while taking the opportunity presented by genomic selection to focus our efforts even more on finisher

Extra genetic progress with genomic selection (at finisher level)



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traits. This should explain why the data in the next graph imply a far greater impact from genomic selection on traits in growing finishing than on weaner pig production. The exception is birth weight, for reasons which will be explained shortly.

Genetic contribution to better margins

The forecasts shown are from a simulation analysis to examine how the latest changes in the TOPIGS breeding program will affect the contribution of genetic improvement to lower production costs and therefore increased margins. They are given in percentages rather than in a currency such as Euros simply because monetary values would change according to feed prices.

But the indications for the annual improvements in individual performance traits are also worth noting. For example, we are totally convinced that both birth weight and uniformity must be included in the selection index for piglet production. It is not just a question of numbers born and reared, the quality of the piglets must also be taken into account. That is why TOPIGS is one of the very few breeders to take the trouble of weighing pigs at birth. We do it routinely and check the variation of weights within a litter as well as the averages. The importance of piglet quality should not be underestimated. It makes management easier in weaner production and also has correlated responses in other traits that directly affect finisher performance.

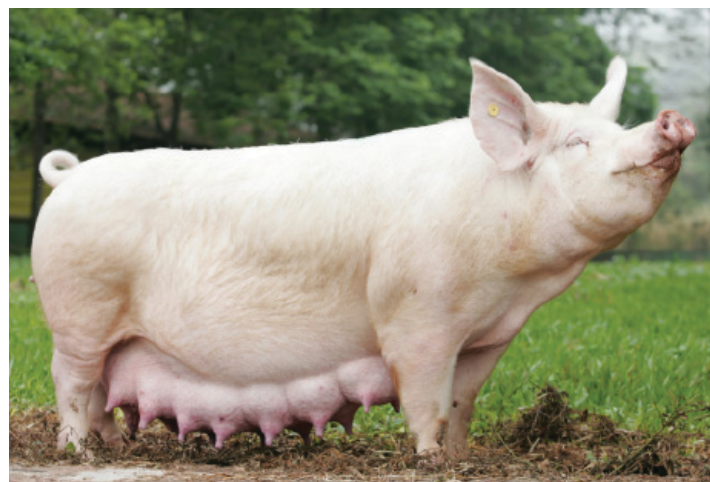
Higher birth weights define lifetime success

Heavy piglets at birth perform better, all the way through to slaughter weight, and having litter-mates of uniform size is the ideal. So our goal is to further improve litter uniformity while maintaining and increasing the average birth weight. Our researchers were able to announce in 2012 that they had identified a series of SNP genetic sequence locations linked to increasing uniformity between litters. Animals with the genes connected to the SNPs produced fewer small litters. The difference in average litter size between pigs with the genes or without the genes was 1.2 piglets. This knowledge can be used in a balanced breeding program with genomic selection where good reproductive performance is supported even as the focus on finisher traits increases. We also understand that total feed

efficiency depends on making sure that the fewest possible pigs are lost between birth and marketing. Another lesson from our analysis of expected genetic progress is therefore that the pre-weaning mortality rate will be reduced even more quickly than in the past, leading to a speedier advance in the number of pigs weaned per litter. In the same way, we are careful to do all we can genetically to reduce the number of sows culled after their first litter.

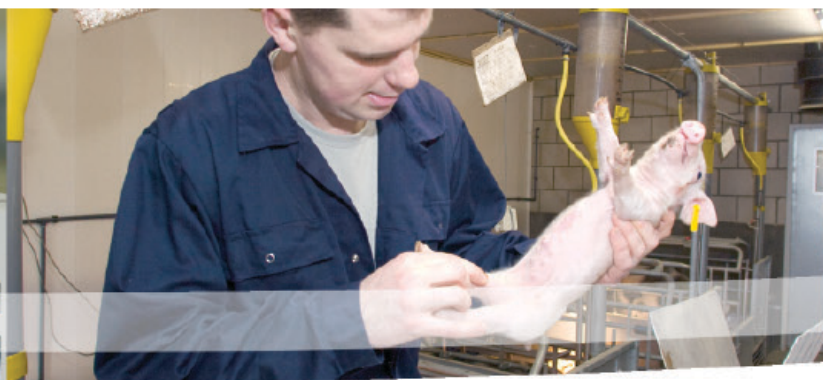
Three TOPIGS principles

Three principles impressed on everyone involved in the TOPIGS breeding program say that every extra piglet born should be weaned, sows should be able to rear the piglets they produce and there should be one functional teat extra on the udder for every additional piglet that the sow has to nurse. These are not meant lightly, they relate directly to the farm's economy of pig production. Just as dead pigs cost feed and heavier piglets at weaning make better finishers, so the presence of trouble-free sows with good mothering abilities will save on labour costs for the herd. Be assured, therefore, the traits of piglet production will definitely continue to be improved even as we increase the rate of genetic progress in improving the growth performance of finishing pigs. One of the big advantages of genomic selection from the point of view of the geneticist is that it opens the way for part of the selection pressure to be re-distributed without sacrificing individual traits or the impact on the overall production economics.



Excellent sows produce excellent finishers





Producer PROfile: Kuijpers Key Farm



Kuijpers Key Farm

Kuijpers Key Farm is a mixed farming operation located just north of Strathroy, Ontario. This is a recently populated 550 sow farm that is owned by Hein and Jose Kuijpers and family. They also crop 800 acres of corn, soybeans and wheat in rotation. All feed is mixed on farm, with soybean meal, and other ingredients brought in.

Hein and Jose, son Joris, and daughter Lieke, emigrated from Holland in 2000 and purchased a farm in Huron County, near Brussels, Ontario. They operated a 10,000 head nursery barn under contract. After working through many challenges in the nursery side of things, and with a son, Joris, soon to graduate from agriculture school, they were looking to expand their enterprise and began to search for a farrow to finish operation. After considering several options they decided to purchase an ongoing 550 sow farm near Strathroy in April of 2012. Upon consultation with their vet, it was decided to depopulate the newly purchased herd, due to health challenges, parity distribution, and poor genetics. After considering several options, they chose TOPIGS as the genetics supplier for their new herd.

Hein's experience with TOPIGS began back in Holland, as they owned a finisher barn in the Reusel area that was used to grow-out TOPIGS breeding stock. Hein recalls the strict health protocols, and stringent selection requirements. Hein also points out that his TOPIGS rep at the time, Jos Kneepkens, kept high standards for phenotypic and genetic qualities. The Kuijpers found an isolation barn nearby that met the biosecurity standards, and worked with

their veterinarian, Dr. Marty Misener to begin an off-site breeding program. The first TOPIGS 20 gilts arrived on May 24, 2012. Although they were experienced pig people, the Kuijpers had limited exposure to breeding. However, with care and attention to detail Hein and his team began breeding in the off-site isolation barn as they began to depopulate the herd at their home site.

The breeding program went well with the TOPIGS 20 gilts, and in June they began breeding their first gilts. As the summer rolled along, they met their weekly breeding targets with hard work and persistence. The home herd had been shipped, and the long process of cleaning, washing and more washing continued. The entire home site was left empty for 4 weeks, and in late September, the entire herd of bred gilts was moved in one day from the isolation site to home. The first gilts farrowed October 15, 2012, and production has been steady ever since.

Hein and Joris look after the crops and help out in the breeding barn and finishers. Elaine Groot, the barn manager, looks after the farrowing rooms and enters all the sow data into PIGKNOWS. She has been impressed with the productivity of the TOPIGS 20 gilts. "They are great milkers and wean more pigs than our previous genetics," Elaine comments. "Hein and his team stay focused on the little things in the barn. We make sure that the farrowing rooms get attention early in the farrowing process. This attention to detail has consistently kept their pre-weaning mortality below 8%. The gilts will

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nurse 12 - 13 pigs and we do our cross fostering early, and then let the sow do the rest." To date the herd has averaged 12.5 born alive and the second parity sows are just being weaned now with some weeks averaging over 12 pigs weaned per litter. The sows eat well in the crate and are weaning 7.5 kg piglets at 23 days of age. We do use milk products on the litters over 14, to ensure everyone gets the energy they need in high demand situations. After day 11 in the crate, piglets are offered a small dry pellet to get them started on solid feed so that when they are weaned, they start better in the nursery. Many weeks the farm achieves 100% sows bred by 7 days, with a running average of 94% since their first weaning. Joris comments, "We see really strong heats, and have had great success working with the TOPIGS 20 female."

Jose looks after the nursery and comments that "the TOPIGS Talent sired piglets grow fast in the nursery." Joris likes the uniformity and growth in the finisher barn. They are now shipping market hogs to Quality Meats in Toronto on a heavy grid, where the ideal carcass weight is 105kg. They have been indexing 110. Kuijpers Key Farm produces more pigs than the current finishing space they have available, and has had to sell extra weaners, and will work with other contract growers to handle all the pigs they produce. Hein's approach to pig management is to take immediate action when something is seen. They explore all options when there is something which affects production. The herd is currently producing 29 pigs weaned/sow with an average parity of 1.29. Colin Fraser, who looks after maintenance and helps with breeding and the finishers, does an excellent job of maintaining the cleanliness and sanitation in the barns. Hein feels the cleaning aspect of production is important, and appreciates the role Colin does for the operation: "We appreciate his role, and highly regard his efforts as important to overall herd health, and biosecurity."

Kuijpers Key Farm is part of a group that collectively sells market hogs, monitors financial records, herd performance, and purchases commodities. Hein likes what the group has done to expand their knowledge of risk management, and forward purchasing. "We need to have experienced people that can provide us with the best information. From there we can make decisions which reduce our risk and set a path for profitability," says Hein. Kuijpers Key Farm is a land based hog operation that focuses on daily production and monitors performance, making adjustments as they go. Their dedication and hard work has created a highly productive swine operation. Hein and Jose appreciate the dedication of their team, and look forward to the future.



Elaine Groot, Hein Kuijpers, Jose Kuijpers, Colin Fraser, Joris Kuijpers



Talent x TOPIGS 20 finishers at Kuijpers Key Farm



TOPIGS 20 gilt nursing 13 piglets





SMS Benchmarking Results for 2012

Many producers using TOPIGS genetics in North America participate in the Swine Management Systems Benchmarking program. Based in Fremont, Nebraska the SMS database now contains production records from 818 farms with 1.462 million females. SMS Benchmarking is voluntary and used as a management tool allowing producers to be ranked against other participating herds on many production parameters.

TOPIGS herds across North America ranked very well in SMS for the year of 2012. Data highlights from all TOPIGS herds are:

SMS Benchmark Data - 2012	TOPIGS Farms	SMS Farms	TOPIGS Advantage
Wean to First Service Interval	5.94	6.58	0.64 -
Farrowing Rate	88.6%	84.9%	3.7% +
Pigs Born Alive/Litter	12.94	12.15	0.79 +
Pre-weaning Mortality	11.6%	13.2%	1.6% -
Pigs Weaned/Litter	11.47	10.56	0.91 +
Pigs Weaned/Mated Female/Year	27.99	24.82	3.17 +
Sow Death Loss	4.1%	7.4%	3.2% -

The data above confirms that TOPIGS is a leader in swine genetics. The attributes of the TOPIGS female in ease of management, good breeding performance, high weaning numbers and low mortality contribute greatly to TOPIGS TOTAL FEED EFFICIENCY.

Contact TOPIGS or your regional representative to learn more about TOPIGS and the SMS Benchmarking results.



Key Appointment Enhances TOPIGS USA Sales & Service Team



Jay Flora, Technical Service & Sales

TOPIGS USA is pleased to announce the April 13, 2013 appointment of Jay Flora in the role of Sales and Technical services in Des Moines, Iowa. He will be responsible for the technical aspects of further product and business development activities for TOPIGS in the United States and Canada.

Jay Flora has broad experience in genetics sales and commercial production. Before joining TOPIGS, Jay was employed for several years by a large genetics company. Prior to that, he held various management roles with Land 'O Lakes, The Hanor Company and Prestage Farms. Jay and his wife Tammy live in Marshalltown, Iowa and have two daughters and three granddaughters. Jay comments, "I am impressed with the products, programs and the people at TOPIGS. I look forward to great opportunities for TOPIGS in the future."

"The addition of Jay to our team further demonstrates TOPIGS' commitment to our customers in the USA," comments John Eggert, Technical Director of TOPIGS USA. "Jay will bring value to our company and to our customers from day one." TOPIGS USA is a leading swine genetics supplier in North America. TOPIGS produces and develops sound, profitable pig genetic programs and breeding systems for commercial hog production and is one of the largest genetics companies in the world with business activities in over 55 countries.

Jay will be based in Marshalltown, Iowa and looks forward to being part of the progressive attitude and excitement that is a TOPIGS trademark as he moves into his new role. He may be reached by calling (515) 297-1904 or email at: jflora@topigsusa.com





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

Power Point Boar Stud

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

TOPIGS Canada Boar Studs

Magnum Swine Genetics Inc.

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

Carlo Genetics Inc.

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

DUTCH SIRES

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

Total Swine Genetics Inc.

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

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 July 31, 2013. Winners will receive a TOPIGS Surprise Package, and the TOPIGS rep in your area will deliver the prize. Employees of TOPIGS and their subsidiaries are not eligible. Please contact us for more information:

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

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

What is the current Pigs Weaned/sow at the Kuijpers Key Farm?

How many piglets will the TOPIGS 20 gilts nurse at the Kuijpers Key Farm?

What is the average Pigs Weaned/Mated Female for TOPIGS in SMS Benchmarking?

What percent of extra genetic progress is made with genomic selection (at finisher level) on birth weight?

Name:

Farm Name:

Address:

Phone #:

Email:

TOPIGS INSIDER Quiz Winners

Here are the winners from last issue: Each winner receives a \$20.00 Walmart Gift Card. The TOPIGS rep in your area will deliver your prize. Congratulations! Dave Wurtz, Sunnyside Colony, Warner, AB; Levi Albrecht, Tiverton, ON; Kevin Wurtz, Horizon Colony, MB; Darren Waldner, Evergreen Colony, MB; Enoch Wipf, Big Sky Colony, Cut Bank, MT; David J Wurtz, Orland Hog Farm, SD; Tamara Hofer, Skyview Colony, MB; David J. Waldner, Pondera Colony, Valier, MT; Hardy Waldner, Blumengart Colony, MB; Paul Wurtz, Upland Farms, Artesian, SD

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