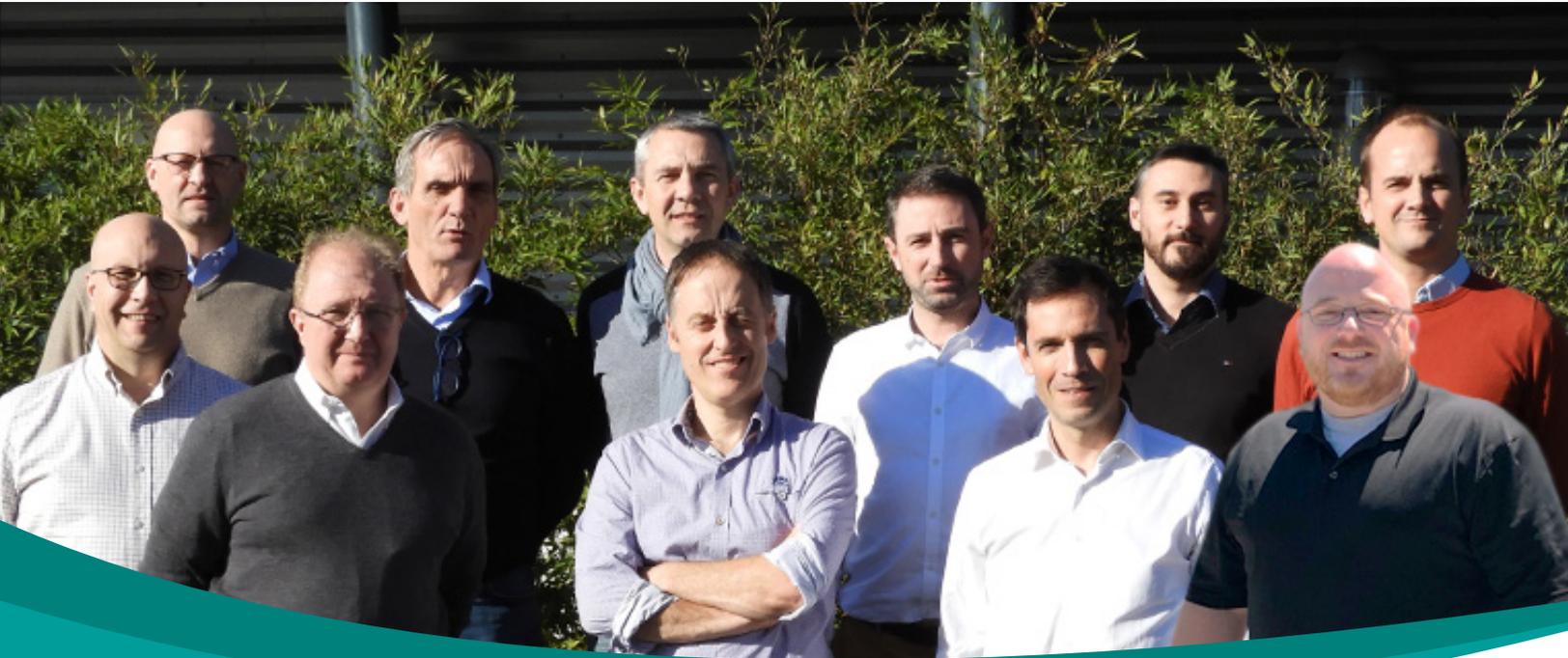




news

June 2018



CUSTOMERS ALWAYS AT THE CENTER OF OUR ATTENTION

Over the last 8 months, the Choice Genetics management team has been working intensively on a strategic plan for the coming 5 years, "Stage 2022". The plan was presented to the Choice Genetics board who gave the green light for its implementation. During the coming months, the conclusions of Stage 2022 will be presented to the global Choice Genetics teams and will be officially launched in the fall of this year.

This strategic plan is built on Choice Genetics' strong foundations:

- A dedicated and highly skilled team of professionals
- A differentiated product portfolio combining efficiency and sustainability
- A global footprint: Europe, North America, Latin America and Asia
- A powerful R&D engine assuring faster genetic progress in the multi-specie context of Groupe Grimaud

While building our strategic plan, we have always kept our customers at the center of our attention. We are looking forward to discuss together what Stage 2022 will mean for you.

Enjoy this Newsletter.



Pieter Seghers, CEO

“THE PROOF OF THE PUDDING IS IN THE EATING”

Field Trials and Benchmarking of Choice Genetics Product Lines. In order to better understand and further improve feed efficiency, growth, carcass merit and meat quality of commercial offspring, Choice Genetics continuously tests the commercial offspring of its sire line products.

IN THE USA Choice Genetics is at present collaborating with three top universities. Some examples.

University of Illinois: A full benchmarking (farrow to finish) of the P81 and P26 was recently completed with results to be disseminated at the 2018 World Pork Expo. Ongoing and future projects with the University of Illinois include but are not limited to additional benchmarking trials (P81 versus P76; P26 versus EB5), CT validation assessments (P81 and P26) and a research grant funded by the National Pork Board involving P26 and EB5 commercial offspring (Characterizing the amount, variability and cellular mechanisms of intramuscular fat deposition throughout the loin using barrows and gilts from two genotypes).

Iowa State University: A multi-seasonal nutrition trial involving EB5 sired commercial offspring was recently conducted at the Iowa State University Western Research Farm. Growth, carcass merit and meat quality data were collected on more than eight hundred animals in an effort to better understand the impact of lysine restriction during late term finishing. An additional multi-seasonal trial using EB5 sired commercial animals is currently underway and will be completed in early 2019.

University of Georgia: A two year assessment of P81 and EB5 commercial offspring fed to heavy ending live weights is nearing completion in Athens Georgia. The growth and carcass information gleaned from this trial will be critical as we look to increase ending live weights in the United States over the next three to five years. In the interest of the needs of our clientele, Choice Genetics is currently conducting benchmarking trials in Japan (CF East), China (CP Foods), Mexico (Clamaral) and Europe.



IN ASIA

CF East-Japan: A benchmarking of EB5 and X6 sired commercial animals is currently underway in Japan. Candidate animals are born this May and placed within a finishing facility in August. Growth, carcass merit and meat quality data will be obtained on a subpopulation of this contemporary group in late 2018.

CP Foods-China: A unique alliance encompassing the assessment of commercially validated performance information on Choice Genetics sires was formed in the fall of 2016. To date, members of our farm and packer teams have collected phenotypic data on more than 2,400 individual animals born and raised in the Hubei province of the People's Republic of China.



IN MEXICO

Clamaral-Mexico: A renewed interest in meat quality finds Choice Genetics working in tandem with Clamaral personnel in an effort to produce and examine the carcass merit and meat quality of P86 and P26 sired commercial animals raised in Sonora Mexico. The offspring from six months of production will be assessed at a packing facility also located in Sonora Mexico and owned by Clamaral.

IN EUROPE

Choice Genetics designed a protocol allowing the comparison of different sire line offspring in a commercial environment. Half of the sows of one group are inseminated with one sire line and the other half with another sire line, ongoing. Traits collected include mortality, growth, FCR, and percent of muscle evaluated with Image Meater technology in the slaughter house. This method has been used to collect data on EXCELIUM offspring.

Performed in commercial conditions, this protocol provides an accurate vision of the performance of our sire line offspring. In addition to being a very interesting comparison tool, it also aims to analyze the efficacy of our selection strategy. In the present case, the same percentage of muscle despite the difference in halothane status, validates the strong emphasis placed on improving carcass quality in previous years. Genetic improvement is also made on FCR thanks to investments made in innovative equipment and on robustness thanks to selection for disease tolerance as E.coli K88.

P81: A SOLUTION BASED SIRE LINE

Choice Genetics proudly introduces the P81 terminal sire. The P81 is the culmination of our proprietary program, uniquely capable of providing profit-oriented solutions. The methodology currently employed has led to a terminal sire with producer driven solutions incorporated from the genome to the consumer's plate. We invite you to deviate from redundancy and repetition of lines; join us in pioneering profit with the P81 terminal sire.

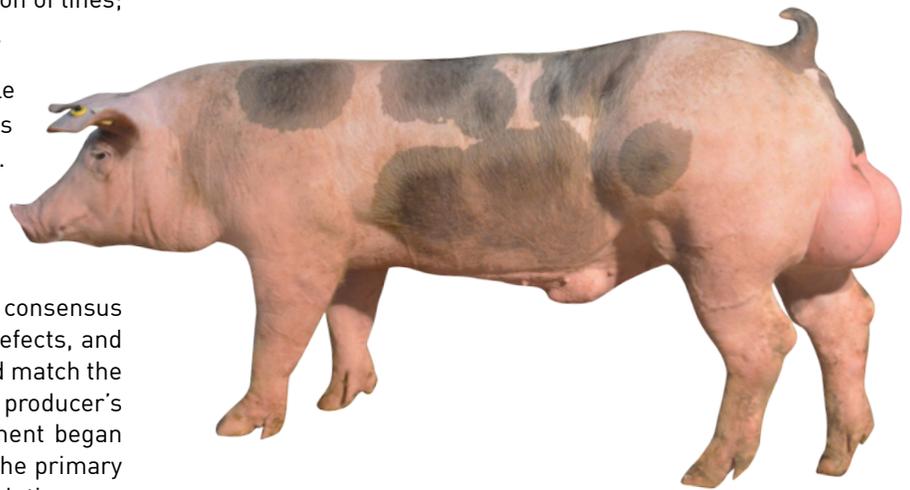
The P81 is designed to deliver a robust pig capable of handling the most challenging of environments without sacrificing efficiencies (weight and cutability).

The journey towards the P81 began in 2013. Choice Genetics engaged producers within the swine industry as to the primary production issues in the available Duroc alternatives on the market. The consensus from those discussions was that a sire line free of defects, and able to excel in livability and maintain efficiency would match the demand in industry. Packer demands had changed, but producer's penciled profit much the same. Initial P81 development began by establishing a process evolving the EBX line into the primary Duroc alternative on the market. The sire line population was analyzed and reduced, confirming elimination protocols for defect traits and establishing a new foundation.

The population now more elite; proprietary CT scanning technology was incorporated into the index. The CT data would allow an index to be derived which would increase the total lean in the carcass while decreasing fat. This yielded two benefits 1) Improved carcass composition increasing packer demand, and 2) Feed Conversion improvement. The threshold level of CT scan data had been accumulated to allow calculations of variance component estimates and trait correlations.

In August 2015 the variance components were re-estimated using another year's data. The decision was made to put more emphasis on growth, the new estimate infusing 6 pounds of gain improvement/year. Feed conversion was augmented using equations based on CT Scan results. While it's roots began in the EBX line, we quickly realized we were creating differentiated

P81



and superior line. The P81 terminal sire was born; now with the purpose of replacing its predecessor in its entirety. Commercial validation work began throughout our global network.

The final piece of the P81 puzzle was the installation of additional NEDAP feeders at the Paramount nucleus farm in 2016. Simultaneous improvement of growth and feed conversion requires multiple data point analysis. Accuracy of feed conversion as well as carcass efficiencies completed the fine tuning of the end goal for the P81. In November 2017 the index was again changed to reflect continued improvement of accuracy and precision of measurement. The P81 indexing and development process is now the gold standard for Choice Genetics and Groupe Grimaud companies worldwide.

| Finish Performance* | | |
|---------------------|------------|-----------|
| Pigs Sold | 142,261 | |
| Mortality | 5.45 | |
| FCR | 2.55 | |
| Marketed, % | 91.70 | |
| Average Weight | 275.38 lbs | 124.91 kg |

*Observed field data



By Bryce Martin

MANAGING YOUR INCOMING GILTS – ESTRUS CYCLES AND INCREASED PROLIFICACY AT FIRST PARITY

Gilts are the foundation of every sow herd. It is important they are raised in a clean and well-ventilated environment so they can perform to their full potential in their first litter and beyond.

Proper gilt development and introduction to the breeding herd will yield rewards in total herd productivity as parity 1 litters represent a significant portion of litters farrowed each week. With standard replacement rates, up to 20 percent of all litters farrowed will be from gilts. There are several important stages to a gilt management program, which can lead to a long and productive life for a female in your herd. They include such things as nutrition, acclimation, health, and early boar exposure. This article focuses on another important piece, Heat No Service events and the proper estrus cycle to breed your incoming gilt.

There has been much research to determine the ideal estrous cycle to breed gilts by universities and independent reproductive physiologists. The results of each indicate that breeding gilts on their 2nd or 3rd estrus cycle yields a better total born.

Recently, some work was done with a customer farm on this issue. The data set is small but the farm will continue to gather data to increase the accuracy of the analysis. This data set is a combination of both pure M6 and pure M3 gilts, a total of 313 parity 1 litters.

Chart 1: Data collected comparing three different gilt estrus cycles

| Cycle | # Head | % of Tot | NTB | % < 10 NTB |
|-------|--------|----------|-------|------------|
| 1 | 92 | 29.4% | 11.35 | 25.0% |
| 2 | 118 | 37.7% | 12.26 | 16.1% |
| 3 | 103 | 32.9% | 12.48 | 10.7% |
| | 313 | | | |

Chart 2: Total born difference between three different gilt estrus cycles

| Cycle Comparison | Total Born Difference |
|--------------------|-----------------------|
| Cycle 2 vs Cycle 1 | 0.91 |
| Cycle 3 vs Cycle 2 | 0.22 |
| Cycle 3 vs Cycle 1 | 1.13 |

Charts 1 and 2 show there was a 0.91 pig increase in total born when breeding on the second estrus cycle compared to breeding on the first estrus cycle. An additional 0.22 pig/litter advantage was seen with gilts bred on the third estrus cycle. There was also a reduction in the percentage of litters with less than 10 total born for gilts bred on their second and third estrus cycles.

Additional information collected in this study includes days to first estrus cycle after farm entry and the average gilt age at first estrus.

Chart 3: Gilt age at first estrus cycle.

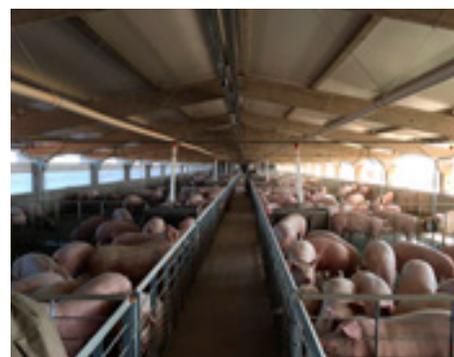
| Cycle | Avg. Entry to First Estrus (d) | Age at First Estrus (d) |
|------------|--------------------------------|-------------------------|
| 1 | 46.1 | 226.3 |
| 2 | 21.7 | 202.3 |
| 3 | 7.2 | 186.7 |
| ALL | 24.1 | 204.2 |

In Chart 3, gilts bred on the third estrus cycle came into heat for the first time 7.2 days after entry to the farm compared to 46.1 days for those gilts bred on their first estrus cycle after entry to the farm. Those gilts bred on their third estrus cycle were also ~40 days younger when their first estrus cycle was observed.

With the need to breed gilts on their second or third estrus cycle, how do you reduce the percent of gilts bred on their first estrus cycle without greatly increasing their age? The key elements are good environment, nutrition, and proper boar exposure.

Boar exposure for gilts can begin as early as 21 weeks of age but no later than 25 weeks of age. Studies have shown that direct boar exposure (in pen) for gilts at an early age will reduce their age of sexual maturity and the age of the gilt when she has her first estrus cycle as compared to gilts receiving indirect (fence line; nose to nose) boar exposure. Daily direct physical contact with a boar for 10-15 minutes/day helps stimulate the gilts reproductive system resulting in earlier sexual maturity and an early first estrus cycle.

The result should be an overall majority of gilts having their first estrus cycle between 180-200 days of age that can then be bred on their third estrus cycle at 220-240 days of age.



by Curtis Boos and Michel Launay

CHINA: HANSWINE'S SECOND NUCLEUS FARM IS READY FOR OPERATION

The Guigang nucleus farm in Guangxi province is ready for operation. It is Hanswine's second nucleus farm in China. It is situated on a 130 acre plot of land and can accommodate more than 3000 sows. The farm is located in Sun mountain area near ZhangMu town. It is isolated from residential areas and meets all the biosecurity requirements.

Guigang nucleus farm is designed by the American equipment company Hogslat. The farm is equipped with automatic feeders, automatic environment control system, pull plug with automatic manure treat system and remote monitoring system. Guigang nucleus farm is consisting of a sow unit, nursery unit and breeding pig testing unit. The test barn is equipped with 168



automatic individual intake feeders and one CT scanner

All of the GGP breeding stock for Guigang nucleus farm will be imported from CGUSA. The first shipment of 1000 GGP gilts and 200 GGP boars from Paramount nucleus farm arrived in China on the 3rd of March 2018. They have already passed the 45-day isolation and quarantine by AQSIQ. The second shipment of 1200 GGP pigs will land at Nanning airport, Guangxi province on June 1st 2018. The first matings will begin in late May 2018 according to the production plan. At the maximum designed capacity, the new nucleus farm can yield 16,000 pure breed large white and landrace gilts every year, covering the annual replacement of 40,000 GP sows. This capacity is enough for Hanswine's 10 million slaughter pig production system.

Hanswine is the second shareholder of Choice-Genetics SAS. In August 2013, Hanswine built its first nucleus farm in Chizhou, An Hui province to accommodate 1500 GGP sows from CGUSA. Choice Genetics China was founded on September 2015 Other than



the two farms in Anhui and Guangxi, the third farm will be built in Hei Long Jiang province in the near future. At that time, with all three farms being deployed, the GGP breeding herd capacity will reach 7,500 sows. The annual slaughter pig production capacity target will reach 30 million in 2025 according to the Hanswine development plan.



by Guy Yaping and Jim Schirmer

CHOICE GENETICS' CUSTOMER – SAN BERNARDO – PARAGUAY – WINS AGRINESS "BEST OF" AWARD IN LATIN AMERICA.



The "Best Of" contest is organized by Agriness by using their clients' results in order to rank production results. With a production of 32.33 piglets weaned/female/year during 2017, the San Bernardo farm was placed first against contestants from Paraguay, Chile, Colombia, Ecuador, Uruguay, and Bolivia.

Hugo Schaffrath General Manager of San Bernardo, "Our team is what makes the difference. Our main advantage is having an involved team who always seeks the best results. We gather weekly to discuss what can be done to move forward".

In November of 2017, San Bernardo Farm welcomed Michel Launay of the Choice Genetics Technical Support team. He oversaw a number of feeding management adjustments for preparing sows, including a dietary restriction regimen to promote slower growth, less muscle mass, and more fat reserves. These management adjustments resulted in an increase of 0.1 liveborn piglet/litter to the current rate of 14.3.

The year of 2018 most likely holds a new record in sight. To be followed.



WELCOME



Bryce Martin

Bryce Martin has joined Choice Genetics on March 24th 2018 as Director for USA & Canada.

Bryce earned a Master Degree in animal science (Breeding and Genetics and Genetics of Meat Quality in Swine) at Iowa State University in 2008 after which he worked in the North American pig genetics business as Director of Sales & Marketing until 2015. During the last two years Bryce was active in the pig nutrition business during which he researched, developed and launched a new feed additive for swine.

As the Director for USA and Canada, Bryce will also assume the general management of Choice Genetics USA.

"I am very excited for the Choice Genetics family that we have found the right candidate for this position. Bryce combines a passion for pig genetics with a strong customer focus and strategic vision on the industry. I am convinced Bryce will contribute greatly to the realization of Choice Genetics' ambitions," said Pieter Seghers, CEO of Choice Genetics:

"I appreciate both the opportunity and responsibility extended to me by Choice Genetics. I think good people are the drivers of success in any corporation. Choice Genetics has a comprehensive research platform aligned with a customer centric mentality. We understand there is a responsibility to our customers, we make decisions today that impact their profitability tomorrow. The technology at hand allows us to turn the hypothetical into reality, and select tomorrow's pig today. I'm extremely excited to be involved," states Bryce Martin.



Brent Green

Choice Genetics USA is excited to announce that Brent Green will join the Choice Genetics team on May 21, 2018 as VP of Operations. Brent has an Animal Science degree from Kansas State University and a Master's Degree in Animal Science from Virginia Tech. The swine industry was a focal point in his education with both university programs. Brent had the unique opportunity to study swine genetics, nutrition, and meat science. He has worked in a variety of technical, sales, training, and management roles in the swine industry both in the US and internationally over the course of his career.

SEE US AT

