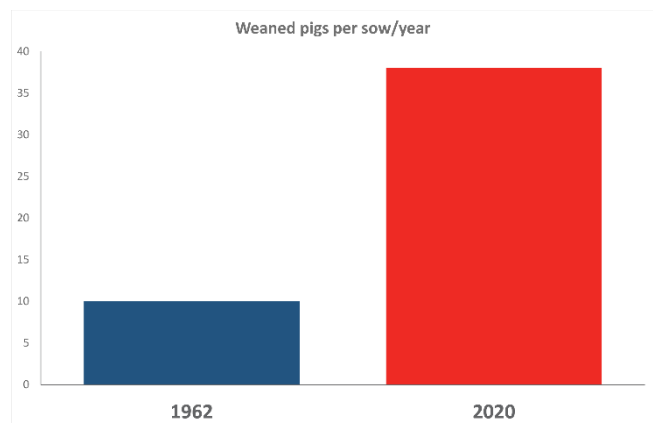




Progress through generations ...

PIC's genetic progress continues.

In 1962 PIC was founded in the UK when pig producers weaned an average of less than 10 pigs per sow per year. As an emergence of a monthly discussion group of farmers organised by an agricultural economist of the University of Reading debating how they could improve their pig business the Pig Improvement Company became a genetics provider which has since had such an impact on the global pig and pork production sector. In 2020 some PIC customers achieve with more than 38 pigs per sow per year a quadruplication of the early results.



What is even more amazing is that the rate of improvement shows no signs of slowing down, says Saskia Bloemhof-Abma, PhD, PIC Geneticist. "Genetic improvement has been successful, and four key pillars are driving accelerated gain," she says.

1. Large populations drive selection intensity

PIC has made significant investments in population size and the expansion of their Elite Farm system. In fact, populations are two to three times larger than six years ago, Dr. Bloemhof-Abma says. Those Elite Farms are located all over world, including here in Europe, for example: Denmark, Ireland, Spain, Germany, Czech Republic, and Russia to support rate of genetic dissemination and contingency. Larger populations allow for selection of the best, highest quality animals. Think about athletes and the UEFA Champions League. Why are teams like Real Madrid, FC Barcelona, and Bayern München those with the best teams? Because they can pick the best from the best and because of their reach and resources they can pick from a global pool of talent.



“It’s easier to find really good football players in a large pool than it is in a restricted pool,” explains Dr. Bloemhof-Abma. “This is the same for pigs, the larger the selection pool, the more opportunity there is to find the best pigs.”

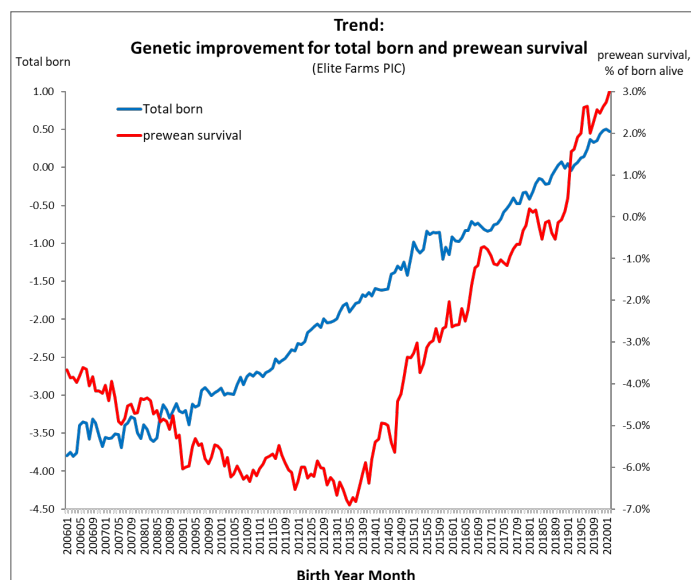
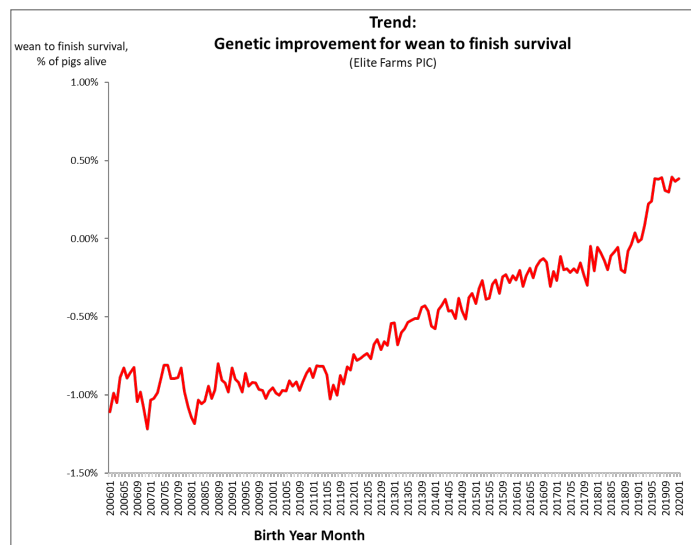
2. Meaningful data capture focuses on what’s most important

Expansion of the GNXbred program and inclusion of new traits continues as a high priority for PIC. The GNXbred program tests PIC’s genetics in different commercial settings in multiple countries to ensure robustness and realization of genetic improvement at the producer level.

Over the past years the GNX program has doubled in size, and new traits like cooked tenderness and primals have been added.

For more than ten years PIC has measured individual piglet birth weight in pure lines and PIC has utilized this trait for more than five years. Based on data and Relationship-Based Genomic Selection (RBGS), throughput has accelerated at a rate of +1.5 pigs/sow/year, while pre-wean survivability has increased +2% and birthweight has increased 110g/pig. In addition, wean-to-finish survivability is increasing by 0.1% per year.

“We’ve seen a dramatic increase in growth by changing our testing procedure from a fixed weight to a fixed time. This allows us to measure efficiency up to heavy weights,” Dr. Bloemhof-Abma says. “And there is already more in the pipeline! The improvements we are talking about here are seen at Elite Farm level. Means, we’re currently about one-third of the way through the upward trend at the commercial level. Genetic improvement realized at Elite Farm level needs to be disseminated down the pyramid to the commercial level.”



3. The best science drives accuracy of selection

Full implementation of RBGS years ago has resulted in a greater than 35% increase in genetic gain. And in the last two years alone, total advancements have increased value by € 6 / £5.45/pig.



“This shows how science plays a vital role in PIC’s genetic decisions, and research continues on emerging science,” Dr. Bloemhof-Abma says. And there’s more to come with the power of a large and focused innovation engine, including full genome sequencing, semen gender skewing and gene-editing like PRRS gene-editing project. We are working closely with the authorities in the different regions worldwide to receive permission.

4. Selection is based on realizable commercial profit

PIC’s customer-focused and service-based approach has made it the leader among pig genetic companies. The company continues to focus on bottom-line profit for its customers, with significant changes on throughput.

“Our focus is to make our customers the most successful pork producers in the globe,” Dr. Bloemhof-Abma says. “As of today, there is no way you can go into a farm and measure one thing that predicts the profitability of that system. Therefore, we measure more than 20 traits and combine that with the economic value of each trait in order to select for relevant economic and social outcome.” PIC’s overall breeding goal is to maximise value potential across the pork chain. However, by focussing on the drivers of economic success we do not disregard social outcome. Productivity, efficiency, robustness and total value lead also to smaller environmental footprint, improved welfare, reduced waste to produce nutritious, good tasting, affordable pork from ethically raised pigs.

More to come

“We are constantly striving to improve,” Dr. Bloemhof-Abma says. “Our high throughput of weaned pigs continues: In 2019 the top 10% for total born showed 22.1 pigs per litter and over the past ten years, we have added 3.7 pigs/litter and 150 g in individual birth weight.” Significant improvements in average daily gain and feed conversion are also evident, she adds. With the top 10% for lifetime daily growth achieving almost 1 kg, those for FCR using 1.63 kg feed for 1 kg growth producers can expect no slowing down in improvements. While genetic improvements accelerate at an even faster rate, we have expanded our portfolio and services through new partner-ships like the Møllevang relationship and the partnership with Hermitage. Those resulted in new offerings: The PIC800 sets new standards for terminal Durocs and the Danish-type females complete our damline portfolio. And the new partnerships resulted in new services as Hermitage operates AI studs in UK and Ireland. “Genetic improvement is accelerating,” she says. “We all play a role in allowing potential to be realized through genetic expression, environment, health and nutrition. It’s not your father’s pig, and we’re excited about the opportunities this provides.”

For more information reach out to PIC UK at PIC.UK.Info@genusplc.com or call 07966 365 201.