



## Not Your Father's Pig

PIC's genetic progress continues.

In 1962, PIC was founded, and U.S. pork producers weaned an average of less than 10 pigs per sow per year. By an amazing comparison, in 2017, some PIC customers achieved more than 35 pigs per sow per year, an average improvement of 6.4% every year.

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

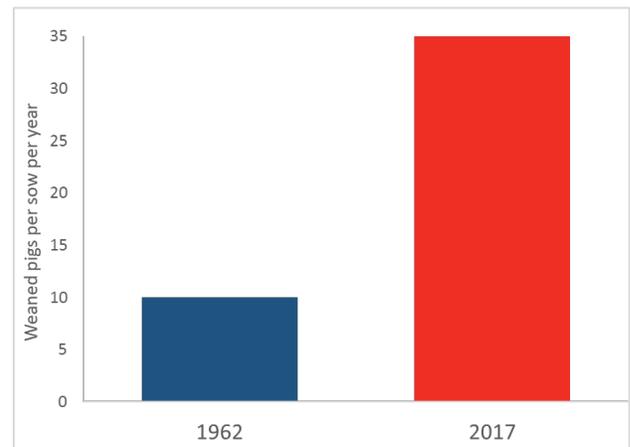
PIC has made significant investments in population size and the expansion of their Elite Farm system. In fact, populations are 2 to 3 times larger than 6 years ago, Dr. Bloemhof-Abma says. Larger populations allow for selection of the best, highest quality animals. Think about athletes and the World Cup soccer tournament. The Netherlands with a population of 16 million has never won the World Cup, while Brazil with a total population of 210 million people is a five-time champion.

"It's easier to find really good soccer players in a large population than it is in a small population," 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 a commercial setting 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 tenderness and primals have been added. Individual piglet birth weight has been measured for 10 years and utilized for 5 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 .25 lbs./pig. In addition, wean-to-finish survivability is increasing by 0.1% per year.





# Pig Improver

“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. “We’re currently about one-third of the way through the upward trend at 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 \$7.00/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, including the porcine reproductive and respiratory syndrome gene-editing project.

### 4. Selection is based on realizable commercial profit

PIC’s customer-focused and service-based approach has made it the leader among swine 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 the animals that are the most economically suited to our customers’ needs.”

### More to come

“We are constantly striving to improve,” Dr. Bloemhof-Abma says. “Our high throughput of weaned pigs continues: Last year, the top 10% of our PIC L03 females averaged 22.2 total born, and over the past 10 years, we have added 3.7 pigs/litter and .33 lbs. in birth weight.” Significant improvements in average daily gain and feed conversion are also evident, she adds.

“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.”

Have questions? Reach out to you PIC account manager for more information.

