

Traditional breeding

$$\begin{aligned}
 &(\sum 2pq(a+q-p)d)^2/\sigma^2 \\
 h^2 &= 2pq(a+q-p)d^2/\sigma^2 \\
 R &= 52pq(a+q-p)d^2/\sigma^2 \\
 (4/5-2) &= h^2(4/5-2) \\
 h^2 &= 0,81 \\
 2(3/7)(1+5/7) &= 42/49
 \end{aligned}$$

Family information has been the keyword in the breeding programme at DanBred for the past 25 years. Performance testing of pigs, their offspring and siblings can influence the breeding value of each pig. This method has historically formed the basis for genetic gain in the Danish breeding system. 🐷

Breeding by means of genomic selection



We are now boosting the breeding objective at DanBred. Genomic selection will build on our traditional breeding methods by also exploiting performance tests on animals, which are not in the immediate family. Animals can share DNA information without being closely related.

A DNA test contains large amounts of information about each pig, that also information about its distant relatives will be revealed. For instance measurement of feed conversion of a pig through a DNA test can give information about the breeding value of a distant relative that does not already have information about feed conversion of a close relative. Meaning, that less measurements enable us to receive more information about the animals' breeding value – and optimise the traits that are in demand. This results in genetic gain with economic profit. 🐷

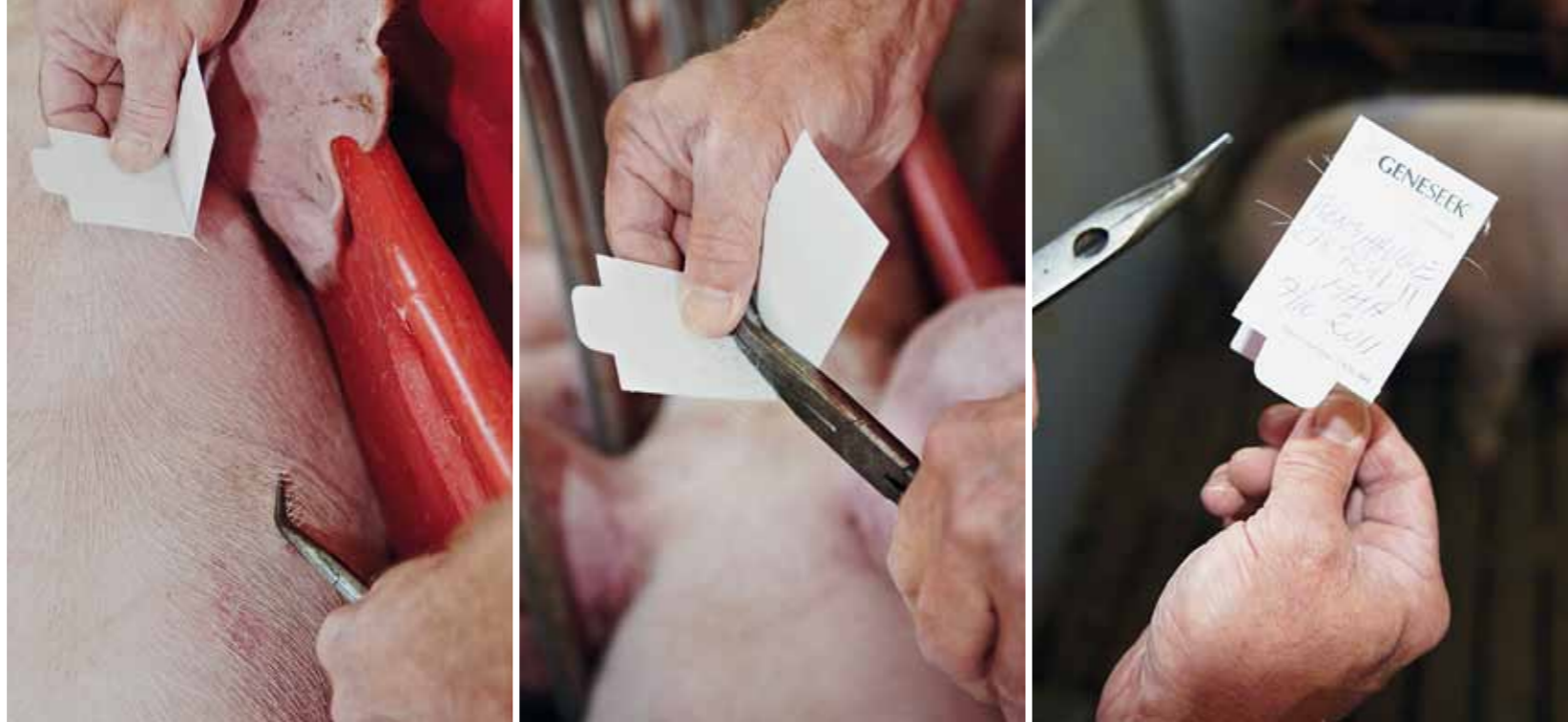
DanBred is a global concept and brand, owned and managed by the Danish Pig Research Centre. We develop, market, sell and distribute breeding material from one of the world's most innovative breeding systems. Our global customers benefit from a complete three-way cross-breeding system based on more than 100 years of analysis, research and development. Our universal and robust breeding objective adds the most progress and value for tomorrow's food producers.

GENOMIC SELECTION

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BOOSTING THE DANBRED PIG - WITH GENOMIC SELECTION

The full potential of DanBred pigs will be unleashed when genomic selection makes its mark on pig production. The power lies in the hair – your pigs' hair. Using hair samples, DanBred ensures that you will not only get next generation's best pigs, you will also achieve 20% more genetic gain.



To find each pigs' breeding value at DanBred, we will go right to the root – the hair root! By using the method of genomic selection, we will focus on DNA to identify those pigs with the best genetics.

Genomic selection is simple in principle. We take a hair sample from the pigs and send it to a laboratory. The laboratory reads the DNA in the hair and we use the DNA-read to generate more accurate breeding values for traits in the breeding objective. This means higher lean meat percentage, better feed conversion and increased

survival. Genomic selection will ensure a greater genetic gain in your pigs at every generation. The expectation is that the annual increase in genetic gain will be up to 20 percent per finisher.

New traits in the breeding objective

Since autumn 2010, we have applied genomic selection with purebred breeding animals. Hair sampling was launched for DanBred Duroc in 2010. DanBred Yorkshire and DanBred Landrace followed shortly after in autumn

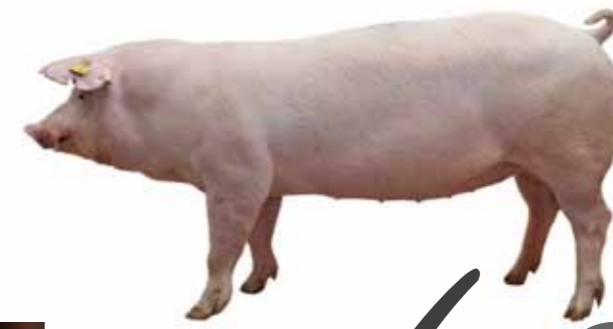
2011. This supplies us with a large amount of data, unlocking knowledge that was previously unattainable.

The use of genomic selection has the potential to uncover new traits, which we were not able to include in the breeding objective earlier. At DanBred, we are currently working with two new traits:

- Longevity of crossbred sows – with genomic selection it should be possible to exploit measurements of longevity for crossbred sows in production. This will provide you with more robust sows.

- A sow's capability to nurse piglets, ensuring improved piglet survival. Improving a sow's capability to nurse her piglets will result in an economic benefit for you and improved welfare for your piglets.

The prospect of new traits, optimising existing traits in the breeding objective, and an increased genetic gain of 20 percent, will make you more competitive with other food producers. By choosing DanBred pigs, you are investing in a profitable future. 🐷



FACTS

- 2.000 pigs of each breed are tested every year.
- The result of DNA testing shows 60,000 points on the DNA string of a pig. Based hereupon calculations on the animals' resemblance with each other on DNA level are made. This information results in larger genetic gain.
- At the time when genomic selection will make its impact, an annual increase in genetic gain of up to 20 percent per finisher shall be expected.

**Genomic
breeding value**