The German Holstein Association (DHV) is the national umbrella organization of the Holstein breeding industry. The DHV represents all governmentally recognized herdbook and AI organizations.

The main tasks of the DHV are:
» The harmonization of working procedures for the member organizations
» Representing the interests of the German Holstein industry both nationally and abroad
» Developing guidelines for linear classification and training of the classifiers
» The organization of national shows and auction sales

Picture credits:
The genetic origin of the Holstein lies in German breeding

Brief information on the German Holstein breeding

Previously:
» Germany is the country of origin of the Holstein breed.
» In 1876, the first official breeding cooperative was established in Fischbek, Altmark.
» Some 140 years of German Holstein breeding underline the quality of genetics, which has proven itself over a long period.

Today:
» Even nowadays, numerous powerful cow families can be traced back to the very first registrations in the German herdbooks.
» Today, there are approximately 20,000 registered Holstein herds.
» With over 1.8 million registered Holstein cows (69%), Germany has the worldwide biggest registered Holstein population.
» 2.3 Holstein cows are under milk-recording (90%).
» The Holstein breed is the largest dairy breed in Germany with 53% of the cows.
» Semen of German top sires as well as embryos out of proven German and international cow families are high in demand all over the world (Semen export in over 75 countries).
» Between 50,000 and 75,000 registered Holstein heifers are exported yearly in over 40 countries.
Longevity and high performance

Significant breeding goals for German Holsteins

The precisely defined breeding goal of the German Holstein model guarantees progress.

Based on objective recording methods; quality, functionality and fitness are at the forefront.

Both breeding goal and genetics are defined by a balance in the following economic indicators:

- **Performance** (production) and **longevity** (health).

**Genetic merit:**
- 10,000 kg: 4.0% fat; 3.5% protein
- Lifetime production > 40,000 kg

**Fitness:**
- Good fertility
- Good persistence
- Low somatic cell count

**Conformation:**
- Sound and sturdy feed & legs
- Healthy and easy to milk udder
- Stature: 145-156 cm
- Body weight: 650-750 kg

**Breeding performance:**
- Fertility traits:
  - Calving ease
  - Vital calves

**Milk production**

**Longevity**
36.7% of the cows are held on farms with 80 to 200 cows.

Perfectly adapted
The basis for an efficient dairy production

Herds size, herd management and the environmental conditions vary considerably between the different regions in Germany and therefore place high demands on the adaptability of the breed. Both family size farms as well as commercial dairy farms with over 200 animals can be found in Germany. This broad range of offerings enables the customers worldwide to successfully use German genetics in their herd.
Four arguments for reliability and profitability
Reliable analysis of the performance potential: **Genomic selection**

The genomic selection enables the advance into a new dimension in genetic evaluation. Informative breeding values for all the traits can be determined shortly after the birth of the calves.

Sophisticated statistical procedures: **Leader in the breeding value estimation**

Germany is the leader in breeding value estimations. Evaluated traits, the estimation method as well as the scale and quality of the data are unique.

Accurately defined and comprehensively collected: **Highest data quality**

The data collected in Germany is highly accurate and very comprehensive. Going from there, genetic progress can be achieved and high security level can be reached.

Innovative technology for the profitable breeding: **Modern technologies of the future**

Efficient reproduction methods and optimal semen availability offer all the resources for the production and distribution of top genetics.
Genomic selection
Top innovative technology for reliable breeding results

» The genomic breeding value determination is a process in which breeding performance can be determined long before there are actual production performances of the individual or the individual’s progeny available.

» Genomic breeding values are therefore more reliable than the Pedigree-Index (ascendance).

» The genomic evaluation system of the independent data center vit was one of the first worldwide to get official recognition by ICAR/Interbull and the qualities of these breeding values are leading internationally.

» The high density of performance records (90%) and the long tradition of the breeding value determination places the German breeding values among the most reliable on the world.
EuroGenomics
The worldwide most reliable cattle breeding

» The genomic selection is based on the largest possible reference population including proven and genomic sires.
» Germany, France, the Netherlands, Scandinavia (Denmark/Sweden/Finland) and Spain have established a common training sample named EuroGenomics. This represents the entire European and North-American Holstein genetics.
» Through cooperation with EuroGenomics, Germany has the world’s largest training sample with over 25,000 Sires (December 2012).

The composition of the EuroGenomics training sample:

- Spain: 5%
- Third countries: 5%
- Netherlands: 19%
- DSF: 20%
- France: 21%
- Germany: 30%
Breeding value estimation
Greater reliability through comprehensive data collection

Germany has a leading role for the breeding value estimation. This applies both for the traits taken into account and the applied estimation methods as well as the scope and quality of the data.

The independent data center vit estimates the breeding values for the German Holstein industry according to the latest scientific findings and under supervision of state regulators.

In the breeding value estimation, pedigree information in addition to performance and functional traits data are combined to estimate the genetic disposition of an animal using statistical procedures.

Data collection is done by independent milk recording organizations. For some traits, herd books and AI companies are involved in the data collection.

RZG:
The Total Merit Index RZG is the index of the German Holstein breeding. The RZG provides a quick and easy selection of sires with economically significant breeding traits.
The index was introduced as early as 1997. The estimated breeding values for the numerous single traits are first integrated within trait complexes to form relative breeding values. Taking into account the genetic association between the complexes, they are combined to the RZG with the following weighting:
RZFit

As additional information, fitness traits (focusing on fertility and calving traits) are combined in the RZFit since August 2009. The index is composed as follows:

- **RZM 45%** (Milk production)
- **RZN 20%** (Functional herd life)
- **RZS 7%** (Udder health)
- **RZR 10%** (Female fertility)
- **RZK 3%** (Calving traits)

**RZG Total Merit Index**

- **RZM 45%**
- **RZN 20%**
- **RZS 7%**
- **RZR 10%**
- **RZK 3%**

**RZE Conformation**

- **40% Udder**
- **30% Feed & legs**
- **20% Body**
- **10% Dairy type**
- **15% (Feed & legs and Udder)**

**Udder 10%**

**Feed & legs 15%**

**RZFit**

**Calving traits 20%**

**Udder 10%**

**Feed & legs 15%**

**RZN 15%**

**RZS 10%**

**RZR 20%**

**RZM 10%**

**RZK 3%**
## Accurately collected data

**The groundwork of every breeding progress**

- 90% of the German Holstein cattle are integrated in the official milk recording association (MLP).
- Those cows are the basis for accurate data collection concerning all the economically and genetically important traits.
- Data collection focuses on milk production, longevity, conformation, health and breeding performances.
- The linear classification follows the internationally recognized system of the World Holstein Friesian Federation (WHFF).
- 19 linear conformation traits guarantee objective, reliable data.
- Various herd sizes and diverse production conditions are recorded.
- This allows a differentiation between genetic components and environmental factors.

## The genetic top animals are a guarantee for breeding progress and genetic gain

### The best of the best

- Only the best of the best is just good enough to get selected as parents for top sires.
- The selection of excellent is guaranteed by a broad and exact data collection.
- The parents of sons are selected taking into account a wide range of information such as health, longevity, functional traits and production performances.

### Bull dams

- Mating contracts with German and international top dams
- Heifers with high genomic breeding values as well as some older bull dams
- Wide variety of bloodlines

### Sires of sons

- From the breeding programs of Herdbooks: Bulls that are at the top 1% of the RZG ranking
  - Minimum level for functional traits
    (Conformation, Udder, SCC, Milkability)
- Out of the worldwide available young genomic sires, the best are chosen as sire of sons.
Test herds
Opportunity for the selection of “new traits“

» It is essential for a dairy farmer to know what production characteristics and what fitness traits a sire transmits to its daughters.
» In addition to the well established progeny testing that has already been in place for decades, large test herds are becoming increasingly important.
» Under the same environmental conditions, daughters from different bulls are in direct comparison.
» Using innovative methods to collect data enables the inclusion of new health and fertility traits.
» Harmonious data collection is achieved with uniform conditions and trained personnel.
Biotechnologies
The key for successful breeding

» The herdbooks provide members with comprehensive and cost effective services (Artificial insemination, Embryo-transfer, fertility management, computerized mating, etc.)

» The intensive development of the national semen exchange in addition to the use of fresh semen ensures an optimal availability of the Top sires.
Safe semen export
High standards guarantee safety

» A wide range of proven bulls and young genomic sires ensure top genetics and fastest breeding progress.
» Semen production takes place in government and EU licensed insemination centers.
» Constant monitoring by government and EU veterinarian organizations
» High prerequisites for semen quality and fertility

Insemination service
» Specialized veterinarians control the semen production
» It is subject to constant monitoring by government veterinary services

Semen Sexing
» Reliability (purity) around 90%
» Influencing dystocia rate
» Deep freezing of sexed semen possible

Embryo transfer
» Fast and multiple offspring of dams with high breeding value
» Short generation interval
» Application of modern procedures in order to replicate valuable breeding dams (including embryo-splitting, Ovum pick up and In Vitro fertilization).
Centralizing animals that are for sale simplifies the selection for the costumer and provides an open quality-based pricing strategy.

The dense network of veterinarians guarantees an uninterrupted monitoring of the cattle. The combination with the official veterinarian service creates a system that assures high quality and maximum safety.
» Bundled offer meets the highest quality and health status requirements.

» Official registration papers contain secure pedigree and performance information. It ensures a high level of security against counterfeit thanks to modern printing technologies.

» A variety of specialized auction sales offer top notch genetics with the best breeding values and conformation.

» German Holstein Show, the showcase of the German Holstein industry; Performance show and product information based on progeny groups of German Holstein sires.
Breeding cattle export
German Holsteins - proven worldwide

» The high performance level, the excellent health status and the extraordinary adaptability of the German Holstein are appreciated worldwide. These are guarantees for satisfied customers in over 75 countries all around the globe.

» Using modern vehicles equipped with safety measures as to respect the welfare of the animals makes the transport of the cattle save. Pregnant heifers as well as milking cows receive professional care especially during long travel distances.

» Breeding cattle sales are a matter of trust. Coworkers from export companies as well as herdbooks are professionals and buy animals that are adapted to the customers' expectations. Good logistic supports an efficient selection of breeding animals on auction or farm sales.

» A wide range of German top notch genetics in the form of breeding, semen and embryos secure a breeding progress and profitability. Customers worldwide renown and proven top genetics “Made in Germany” to improve their herds.
The product benefits on a glance
So much quality in German Holsteins:

1. Long and successful breeding traditions in the country of origin of the Holstein breed
2. High longevity and consistent performance through substantially improved breeding work
3. Perfectly adaptable to the different production environments and conditions
4. Very accurate breeding value predictions through genomic selection
5. Modern breeding value estimation are the basis of the reliability
6. Exact and efficient data collection leads to high quality data and enables genetic progress.
7. Highly modern and efficient technology is the basis for top genetics.
8. Optimal structure, organization and logistics of high pedigree animal marketing.
9. Top level for health, transport and know-how in genetic export.

From Germany internationally successful
Top products for the global dairy industry
1. Download QR-Code Reader from the Internet with your smartphone
2. Scan the QR-Code with your smartphone
3. Open the link with the browser of your smartphone