ABOUT CRV

CRV is a co-operative that is owned by the Dutch Co-operative CR Delta and the Flemish Co-operative VRV. About 27,000 dairy and beef farmers in the Netherlands and Flanders are members of these co-operatives and they have great influence on CRV’s policy. They do this through the co-operative’s advisory bodies and member committees.

Company structure
CRV is organized in business units that do business in the same time and culture zones as their customers. Business units and headquarters exchange knowledge and experience, in order to develop and deliver the best herd solutions available to dairy and beef cattle farmers worldwide.

CRV has five topographical business units:
- Western Europe
- Central Europe
- Oceania
- South America
- North America

CRV’s products and services are delivered to approximately 60 countries. Our head office, located in Arnhem, supports all our business units and their local branches.

Sustainability
At CRV we work hard to improve our position in the food chain as a sustainable enabler of dairy and beef production. This position in the food chain is a special one, because as specialists in bovine genetics and herd management, we stand at the beginning of it. We develop innovative products and solutions to support farmers all over the world, so we have a special responsibility to them and to the animals they rear and care for. The world’s increasing demand for food drives the need for effective food production. However, this has to be achieved with care for our environment. In this respect, we haven’t lost sight of our responsibility to secure the health, welfare and productivity of the cows and animals that are in our farmers’ care. By carefully combining these elements, we serve both our farmers and our planet, achieving sustainable growth.

Innovation drives us
Continuous innovation is important at CRV. We invest heavily in Research & Development because we aim always to provide the best possible solutions to problems encountered by farmers in their breeding and herd management. In this regard, CRV works closely with universities in several countries.

Management solutions
Farmers have to deal with ever-increasing volumes of data and facts. CRV devises management solutions that convert these facts into practical information. These are vital instruments that assist the modern farmer in taking the right commercial decisions. (Mobile) internet technology is playing an increasingly important role in the application of these instruments.

Genetic products
Semen and embryos are carriers of genetic information. CRV is constantly conducting research into options for improving the genetic quality of semen and embryos.

The influence of genomic selection has entailed a revolution in breeding in recent years. CRV is a global leader in the use of genomic selection in breeding programmes. In September 2008, the first breeding values for marker-selected young bulls were published under the name InSire. InSire bulls are characterised by superior genetic disposition.

Overview about CRV
CRV is a leading customer-focused cattle improvement co-operative, fully committed to adding value for farmers.

- 100,000 clients worldwide
- 12 daughter companies on five continents
- Sales activities in more than 60 countries
- 12 breeding programmes for different breeds and breeding goals
- About 2,000 employees
- Around 11 millions of sold semen doses a year
- Full package of management solutions for cattle farmers
Dairy and Fitness!

The Fleckvieh breed is one of Europe’s oldest breeds and, with its total population numbering approximately 41 million, it is the second largest breed in the world. It was developed to be highly productive on mostly grass-based diets and to produce higher amounts of fat and protein for cheese making. Fleckvieh cows are being bred throughout the whole world today. The most important Fleckvieh populations are in Germany, Austria, the Czech Republic, Italy and France. CRV’s Fleckvieh breeding programme uses all these populations to ensure that it sources the best available bulls.

Fleckvieh breed characteristics

Fleckvieh cows are healthy, hardy and very adaptable to different geographical and climatic conditions. Easy calving, good fertility and a long productive life are, besides the high performance potential for milk and beef, the basis for efficient production. Very good conformation of udders and feet and legs together with the medium body size of animals is ideal with respect to longevity and feed efficiency.

Breeding goal of CRV

The aim is to improve protein yield and animal fitness and health while at the same time maintaining meat performance and to increase lifetime performance. The objective is a high functional longevity with an average lifetime performance of 30,000 kg of milk.

In short the breeding targets:
- Milk yield per lactation 6,500–7,500 kg
- Milk components 4.2 % fat and 3.7 % protein
- Increase in milk production 1,000 kg from first to second to third lactation
- Lifetime milk production 30,000 kg
- Daily gain of fattening bulls > 1,300 g
- Adult weight of cows 650–850 kg
- Stature 140-150 cm
- Strong udders with good texture and correct teat placement
- Strong feet & legs

Structure of GZW – new since April 2016

The breeding goal in Bavaria and the Czech Republic are defined by the economical total merit index GZW. The milk-, meat- and fitness-traits are well-balanced. All individual traits are weighted according to their economic importance on farm basis. The weight of the main traits in GZW is

<table>
<thead>
<tr>
<th>Trait</th>
<th>Past</th>
<th>New</th>
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<tbody>
<tr>
<td>Milk</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Beef</td>
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<td>18</td>
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<tr>
<td>Fitness</td>
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<td>44</td>
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<tr>
<td>Mkg</td>
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<td>Fkg</td>
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<td>Pkg</td>
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<tr>
<td>Carcass %</td>
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<td>7</td>
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<td>4.6</td>
<td>7</td>
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<tr>
<td>Longevity</td>
<td>13.4</td>
<td>10</td>
</tr>
<tr>
<td>Persistence</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fertility</td>
<td>6.8</td>
<td>14</td>
</tr>
<tr>
<td>Calving ease pat.</td>
<td>1.8</td>
<td>0</td>
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<tr>
<td>Calving ease mat.</td>
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<tr>
<td>Vitality index</td>
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<td>5</td>
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<tr>
<td>Udder health value</td>
<td>9.7</td>
<td>10</td>
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<td>Milking speed</td>
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<td>1</td>
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</table>

As you can see from the distribution of the indexes, 95 % of the bulls in Germany and Czech Republic have breeding values between 76 and 124. This means that bulls with a proof over 124 represent the top 2.5 % of the breed for that trait.
The estimation of breeding values for Fleckvieh cattle implicates some changes in April 2016. For this, new characteristics, the inclusion of new data sources and a modified index calculation method are counted. Every breeding value estimation has the goal to present the „genetic value“ of an animal. These innovations have been developed in order to help everyone who is involved in the breeding of Fleckvieh cattle in order to improve the high potential of this breed for milk, fitness and meat.

New Data sources
Regarding the group of health characteristics not only data for mastitis, early fertility dysfunctions, cysts and milk fever from Austria and Baden-Wurttemberg will be included as before — from April on also the collected diagnoses from Bavaria will be included. Surveillances around birth from all three countries will be integrated as well as the separating of the placenta and the downer cow syndrome. These collected data flow into the breeding values for udder health and fertility value.

New breeding value – vitality index
During the past, the rearing period was not further recorded and considered for breeding. The rate of stillbirths comprised only the birth and the first two days thereafter. With the new vitality value the rearing period of the descendants of a bull will be provided with a breeding value. Male descendants of a bull will be recorded until the tenth month of his life, whereas female descendants will be recorded until short hand for the insemination (15 months). The breeding value is composed of the following phases:
- Still birth or died until the second day (= rate of stillbirths; weighting 52 %)
- Rearing phase 1: 3rd until 30th day (male and female; weighting 24 %)
- Rearing phase 2: 31st day until 10 months (male; weighting 12 %)
- Rearing phase 3: 31st day until 15 months (female; weighting 12 %)

Changes in the total breeding value
The changes regarding the total breeding value (GWZ) concern the following category groups:
1. New genetic correlations
2. New calculation method
3. New economic weighting

Changes of genetic correlations
All characteristics, we breed with, have negative or positive correlations, which have been newly calculated recently.

The correlation between the milk characteristics and the meat- resp. fitness-characteristics are predominately more negative as in the past. On the other hand correlate the fitness characteristics with each other slightly more positive. This implies not only impacts on the total breeding value, but also on the securities and the expected selection success. A known negative correlation is the one between milking speed and udder health. If one raises the milking speed, generally the udder health will be downgraded.

One can identify a positive correlation regarding the persistence and the fertility. Regarding the fertility one can say that it is profitable to have a not too high milk performance at the beginning of the lactation and a flat lactation curve.

These correlations have been known before, but have been estimated differently.

New calculation method for GZW
The so far used method showed a raised dispersion of the total breeding values at low to medium reliabilities. With the method, the dispersion will be decreased and therefore the total breeding value close ranks. Thereof mainly cows and genomic young bulls are concerned. For a better orientation one can emanate from the following average old new-changes regarding GZW of cows and genomic young bulls:
- 140 → 132
- 135 → 128
- 130 → 124
- 125 → 120
- 120 → 116

New economic weighting
Once in a while it is important to reconsider the race-breeding-goal and therefore adapt the total breeding value respectively.

It is already ten years ago when the last adaption of the total breeding value took place. A study group of representatives of the ASR and AGOF as well as breeding value estimators are currently working on a proposal which has been discussed and agreed upon with the breeders of the different breeding unities. The results as well as the selection success per generation with new correlation and with new economic weighting per generation (calculated in breeding value scores) will be presented in table 2.

The discussion was not easy, as it one had to distribute 100 % and one had to consider many different meanings. Likewise, the modified correlations had to be taken into consideration. Huge consensus reigned regarding the „not consideration“ of the exterior
Looking at female cattle, the new vitality index describes the lifetime period from birth till insemination (15 months).

In GZW, because the breeders (also during the selection of the bulls) attach great importance to this. The following three subareas have been discussed intensively:

- Fat-protein-rate
- Weighting of the characteristic meat
- Fertility rate

The previous weighting from fat to protein was 1:10. From an economic point of view one uses in nowadays a closer percentage – therefore 1:1,3 is used today. Within the category group “meat” success of selection with regards to netto gain could be achieved in the past. The characteristics grade of goods and cannibalization are a little worse hereditarily in contrast. In the future, one lay more stress on these characteristics – at the expense of the netto gain. Within the category group fitness one lay more stress on the fertility in the future in order to stabilize the slightly negative development of the past years. The paternal calving ease has been removed completely as the selection of easy calving bulls will be done automatically. In the future the new weighting of the main characteristics milk, meat and fitness will be managed with 38%:18%:44%.

**Conclusion**

Because of the shortening of the bulls, the bulls will close ranks with regard to the total breeding value. This favours a few daughter proven bull that will be ranked better. The characteristics grade of goods, cannibalization, productive life, fertility value and udder health create 48% of the total breeding value. All these characteristics correlate negatively with fat- and protein-kg and raise - with regard to the milk value - some weaker bulls in the ranking.

In general, the total breeding value shows a breeding goal for a specific population and has nothing to do with a concerted mating of a single animal. Therefore it is always important to have a look at the single breeding values and not only the total breeding value. Every pairing should be a specific pairing wherefore you can get advice from our pairing program SireMatch. Our goal is to provide you also in the future with efficient and healthy genetics – whatever your focus is performance or fitness.

Source: team of breeding estimation ZAR and LfL Grub

In the ILC, the lab of the CRV AI station in Wasserburg (Bavaria), the produced Fleckvieh semen is checked, processed and sent to countris all around the world. Furthermore CRV-Holstein semen for German farmers is stored here.

**CASA – HIGH SEMEN QUALITY GUARANTEED**

Because of a high quality of both, the good work of the CRV technicians and of semen, the non-return-rate of CRV-AI-clients is one of the best in whole Bavaria. From summer on every charge is controlled objectively by computer.

In the past there has been a high standard for semen quality already. Employees of the ILC, the laboratory of the AI station in Wasserburg, Bavaria, used the microscope to check the amount of semen cells as well as the mobility as well as the morphology of an ejaculate. This is quite complex and not objective for 100%. From now on CASA (Computer Assisted Semen Analysis) supports the work, done in the lab. Every ejaculate is checked by computer. Thus the analyses are more precise, repeatable and documentable. “Our clients can be sure, that they get a high quality of semen. Without CASA this would not be possible on that level”, says Mag. Joseph Dengg, head of the AI station.

In the ILC, the lab of the CRV AI station in Wasserburg (Bavaria), the produced Fleckvieh semen is checked, processed and sent to countris all around the world. Furthermore CRV-Holstein semen for German farmers is stored here.
In the past, the needs of farmers as well as dairies, meat processing and consumers have been changed. The animals have to be inconspicuous and they have to fulfil a high lifetime production respectively they need to have good fattening characteristics as for example a high net increase on a daily basis. At the same time they have to use the valuable feeding stuff low-loss for the milk- and meat production.

Beside high-quality production, nowadays sustained economic activity will be demanded from the cattle farmers. This includes the reduction of carbone dioxide-output of the animals as well as a reduced use of antibiotics and hormone.

Choosing the right genetics
By means of the two new indices farmers can more easily choose breeding bulls which breed efficient and healthy animals. Of course one can do this also on the basis of the individual breeding values. But then the farmer has to estimate which breeding values carry more weight. For example: Is a bull with +1,200 kg milk and 101 longevity more efficient than a bull with +700 kg and 119 for longevity? And how should fertility and udder health be evaluated? The new efficiency index includes already the right estimation.

Tobias Lerner, Global product manager for Fleckvieh, says that the new indices are a consequence of the CRV sustainability strategy. "Milk producers demand durable, high producing, unproblematic and healthy animals. This exactly is the breeding goal of CRV and exactly this fact will be underlined by the indices efficiency and health."

Click here to watch a film about better life health and better life efficiency to get further information.

With SiryX, the sexed semen of CRV, you take care about getting a female progeny out of your favorite cows. Furthermore you can inseminate other cows with beef bulls to get extra money from the feeder. SiryX semen is available from many top bulls.

For further information please visit our website or ask your distributor.
CROSSBREEDING WITH FLECKVIEH

Crossbreeding market in Netherlands/Flanders
The market for crossbreeding in Netherlands and Flanders has grown in the last years. Crossbreeding accounts now for 10% of the inseminations. In total, 250,000 inseminations are done with other breeds than Holstein, almost exclusively for crossbreeding. Fleckvieh has rapidly become the most popular breed for crossbreeding. At this moment around 90,000 inseminations are done with Fleckvieh-bulls, mostly on Holstein-cows.

Research
The effect of crossbreeding has been analyzed in two ways. First, the realized breeding values of breeds other than Holstein were studied. Second, the actual performance of crossbreeding cows were analyzed critically.

The breeds Fleckvieh, Montbéliarde, Swedish Red, Jersey and Brown Swiss were part of this research. For Fleckvieh, the breeding values of 112 bulls with in total nearly 20,000 daughters were analyzed. The performance data research included 9000 F1’s (Holstein x Fleckvieh), 1700 F2’s (Holstein x Fleckvieh x Fleckvieh) and 900 F2’s (Holstein x Fleckvieh x Holstein).

Fleckvieh superior in Health-trait
Data shows that Fleckvieh is superior for fertility, condition score, somatic cell count, maternal calving ease, and rump angle. Fleckvieh has the best calving-interval, the highest viability of the calves of the crossbred cows and the highest meat-index, based on the data of the fattening bulls and the slaughtering results of the culled cows.

Furthermore Fleckvieh was above average in persistency and claw health. Direct calving ease is an attention point when using Fleckvieh on Holstein. Breeders should only consider the very best calving ease bulls when they want to use Fleckvieh-bulls on heifers.

Which breed to use on the first generation crossbred cows?
The data shows that F1’s (Holstein x Fleckvieh) produce 500-600 kg of milk less than the purebred Holsteins in their first lactation, but with a slightly higher protein-percentage. In a more intensive system the F1’s can be bred back to Holstein. The resulting cows produced about 30 kg of fat and protein less (Holstein 589 kg versus 560 kg for Holstein x Fleckvieh x Holstein) in their first lactation, but they keep advantages in fertility and health-trait.

If the goal is to further improve fertility and health then the F1’s should again be bred to Fleckvieh-bulls. To keep milk production on a good level, it is advisable to select within Fleckvieh the highest bulls for production. This is well in line with the CRV-breeding goal for the Fleckvieh breed, which has a high emphasis on Dairy – and Fitness traits!

CRV-advice in Crossbreeding.
Due to its good data infrastructure and high quality services, CRV is able to give an excellent advice for improving the results of the herd. Together with your CRV representative and the services and solutions that we offer, we can give a great contribution through an optimal advice of our best Fleckvieh-bulls from our breeding program!
**DELL**

- Easy Calving
- Udders
- Fat/Protein

Please note:
- Feet & Legs

---

**EFFICIENCY**

**HEALTH**

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>TM</th>
<th>MI</th>
<th>RT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMI</td>
<td>122 (93%)</td>
<td>114 (98%)</td>
<td>102 (89%)</td>
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</table>

**PRODUCTION**

Kg of milk per kg

<table>
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<tr>
<th>Year</th>
<th>Fat</th>
<th>Protein</th>
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<td>2016/17</td>
<td>4.5</td>
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**FITNESS**

- Fitness
- Udder health
- Body condition

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**EXTERIOR**

- Frame
- Musculature
- Udder

- Height at withers
- Body angle
- Udder attachment

---

**MILK PERFORMANCE**

- Milk yield
- Fat and protein

---

**EMEROG**

- Alternative bloodline
- Udder line
- Fitness

Please note:
- Feet & Legs

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**EFFICIENCY**

**HEALTH**

**MAIN TRAITS**

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- Udder attachment

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**MILK PERFORMANCE**

- Milk yield
- Fat and protein

---
INDOSSAR

**Efficiency**
- +3%

**Health**
- +4%

**Main Traits**

<table>
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<tr>
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<th>LOM 118 (97%)</th>
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<td>Reliability</td>
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**Udder**
- Somatic cell score
- More hock angularity

**Milking Performance**

<table>
<thead>
<tr>
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**Extroior**
- Reliability 98% D. 478

**Informant**

**Efficiency**
- +2%

**Health**
- +1%

**Main Traits**

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**Udder**
- Calving easy
- Frame

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## INKOGNITO

**Breeder:** Aidelsburger GbR, Altomünster-Asbach  
**INKOGNITO**

### Efficiency
- **Breeding program:** GLOBAL FLECKVIEH

#### Health
- **Carcass percentage:** 118
- **Carcass class:** 116
- **EUROP trade class:** 112

#### Beef index
- **Calving easy**

#### Udder health
- Please note:

### Production
- **Kg of milk:** +462
- **% fat:** -0.17
- **% protein:** -0.02
- **kg fat:** +6
- **kg protein:** +15

### MAIN TRAITS
- **TM:** 131
- **MI:** 108
- **RT:** 122

### Fitness
- **FertV:** 116 (78%)
- **CPH:** 106 (88%)
- **Cyt:** 109 (89%)
- **Mlev:** 105 (87%)
- **Max:** 116 (96%)
- **Univ:** 114 (92%)

### Udder
- **3rd lactation:**
  - **Reliability:** 95% D. 127
  - **SCC:** 3rd lactation
  - **VI:** 95 D.
  - **FertP:** 90 D.
  - **Miu:** 90 D.

### Main Traits
- **Reliability:** 50 D.
  - **RL:** 8090
  - **% fat:** 8.09
  - **% protein:** 3.94
  - **Kg fat:** 319
  - **Kg protein:** 3.43

### Udder health
- **CL:** 95
- **Rump width:** +4%
- **Pasterns:** weak
- **Fore udder attachment:** small
- **Body depth:** long
- **Height at cross:** short
- **Body length:** small
- **Teat length:** long
- **Teat thickness:** weak
- **Udder cleanliness:** inwards

### Health
- **UHV:** 94%
- **Mast:** 94%
- **M.fev.:** 95%
- **FertDis.:** 78%

### Fit
- **Reliability:** 94%
- **CP:** 97%
- **FertV:** 52%

### Exterior
- **Reliability:** 88% D. 66
- **Frame:** 102
- **Muscularity:** 106
- **Feet & legs:** 96
- **Udder:** 104
- **Height at cross:** small
- **Body length:** short
- **Bump width:** narrow
- **Bump angle:** ascending
- **Rump angle:** straight
- **Pasterns:** weak
- **Rear udder length:** short
- **Rear udder attachment:** weak
- **Pour fat placement:** outswards
- **Rear teat placement:** inwards
- **Udder cleanliness:** inwards

### Milk Performance
- **Fat:** 105 D.
- **Protein:** 87 D.
- **Carcass class:** 231
- **EUROP trade class:** 277

---

## JASPER

**Breeder:** KLAS Nekor a.s.

### Efficiency
- **Breeding program:** GLOBAL FLECKVIEH

#### Health
- **Carcass percentage:** 112
- **Carcass class:** 108

#### Beef index
- **Somatic cell score**

#### Udder
- Please note:

### Production
- **Kg of milk:** +594
- **% fat:** +0.09
- **% protein:** +0.09
- **kg fat:** +32
- **kg protein:** +28

### MAIN TRAITS
- **TM:** 123
- **MI:** 121
- **RT:** 100

### Fitness
- **FertV:** 98 (49%)
- **CPH:** 98 (54%)
- **Cyt:** 109 (89%)
- **Mlev:** 105 (87%)
- **Max:** 116 (96%)
- **Univ:** 114 (92%)

### Udder
- **1st calf:**
  - **Reliability:** 95% D. 127
  - **SCC:** 95 D.
  - **VI:** 95 D.
  - **FertP:** 90 D.
  - **Miu:** 90 D.

### Main Traits
- **Reliability:** 50 D.
  - **RL:** 8090
  - **% fat:** 8.09
  - **% protein:** 3.94
  - **Kg fat:** 319
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- **Fore udder attachment:** small
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- **Teat length:** long
- **Teat thickness:** weak
- **Udder cleanliness:** inwards

### Health
- **UHV:** 94%
- **Mast:** 94%
- **M.fev.:** 95%
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### Fit
- **Reliability:** 94%
- **CP:** 97%
- **FertV:** 52%

### Exterior
- **Reliability:** 88% D. 66
- **Frame:** 102
- **Muscularity:** 106
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- **Udder:** 104
- **Height at cross:** small
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- **Bump angle:** ascending
- **Rump angle:** straight
- **Pasterns:** weak
- **Rear udder length:** short
- **Rear udder attachment:** weak
- **Pour fat placement:** outswards
- **Rear teat placement:** inwards
- **Udder cleanliness:** inwards

### Milk Performance
- **Fat:** 52 D.
- **Protein:** 8 D.
- **Carcass class:** 293
- **EUROP trade class:** 295

---

**Wurzel:** Hubert Niederer, Feldkirchen-Kleinwiesheim  
**3rd calf**
MUNGO Pp

- **Milk**
- **Persistence**
- **Feet & Legs**

Please note:
- **Milkspeed**

**EFFICIENCY**

- **EFFICIENCY**
  - Efficiency: +9%

**HEALTH**

- **HEALTH**
  - Health: +4%

**MAIN TRAITS**

- **MAIN TRAITS**
  - TMI: 125 (94%)
  - MI: 126 (99%)
  - BI: 79 (99%)
  - FI: 113 (90%)

**PRODUCTION**

- **PRODUCTION**
  - Kg of milk: +1.107
  - % fat: +0.02
  - % protein: -0.10
  - Kg fat: +48
  - Kg protein: +30

**FITNESS**

- **FITNESS**
  - FertP: 115 (99%)
  - CPm: 106 (99%)
  - V: 96 (99%)
  - M: 89 (99%)

**EXTERIOR**

- **EXTERIOR**
  - Reliability 96% | D. 301

**MILK PERFORMANCE**

- **MILK PERFORMANCE**
**POLARBAER**

- Easy to manage cows
- Calving easy
- Feed & legs

Please note:
- Teat thickness

**EFFICIENCY**

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<thead>
<tr>
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<th>Reliability</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Margin</td>
<td>+5%</td>
<td>124 (57%)</td>
</tr>
<tr>
<td>Milk</td>
<td>+4%</td>
<td>115 (99%)</td>
</tr>
</tbody>
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**PRODUCTION**

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<thead>
<tr>
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<th>Reliability</th>
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<tbody>
<tr>
<td>Kgs of milk</td>
<td>99%</td>
<td>4,02</td>
</tr>
<tr>
<td>% fat</td>
<td>99%</td>
<td>3,38</td>
</tr>
<tr>
<td>% protein</td>
<td>99%</td>
<td>786</td>
</tr>
</tbody>
</table>

**FITNESS**

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<tbody>
<tr>
<td>Body length</td>
<td>+1%</td>
<td>120 (99%)</td>
</tr>
<tr>
<td>Bump width</td>
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**HEALTH**

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<tr>
<th>Disease</th>
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<tbody>
<tr>
<td>Mastitis</td>
<td>+4%</td>
<td>105 (87%)</td>
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**MILK PERFORMANCE**

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<td>+4%</td>
<td>670 D.</td>
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<tr>
<td>2nd</td>
<td>+4%</td>
<td>4,30</td>
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Please note:
- Low angles steep angles
- Hoof height
- Add. Teats clean udder
- Udder cleanness
- Feed & legs

**POTTER**

- Milk
- Fitness
- Teat placement

**EFFICIENCY**

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**POLARBAER**

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- Teat thickness

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**POTTER**

- Milk
- Fitness
- Teat placement

**EFFICIENCY**

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Please note:
- Low angles steep angles
- Hoof height
- Add. Teats clean udder
- Udder cleanness
- Feed & legs
RALDI

**Milk**
- Fitness and Somatic cell score
- Fertility
  - Please note: Persistence

**Efficiency**
- +8%

**Health**
- +8%

**Main Traits**
- TMI: 129 (93%) MI: 117 (98%)
- PRODUCTION
  - Milk yield: +944
  - % fat: -0.20
  - % protein: +22
  - kg fat: +26

**Fitness**
- Perceived: +1%
- Somatic cell count: +1125 (99%)
- Reliability: 98% (D. 450)

**Exterior**
- Frame
  - Fair 104
- Muscularity 113
- Feet & legs 104
- Udder
  - Medium 124
- Height at cross: small 104
- Body length: short 104
- Rump width: narrow 104
- Body depth: small 104
- Rump angle: ascending 96
- Hoof development: sound 96
- Pasterns: weak 110
- Elbow height: low 104
- Front udder length: long 105
- Rear udder length: long 105
- Hoof angularity: weak 100
- Growth rate: weak 100
- Udder cleanliness: 112

**Milk Performance**
- First lactation: 110.066
- 2nd lactation: 9.939
- 3rd lactation: 10.066

**Breeder:** Berger Robert, Taufkirchen

RECKENBACH

**Milk**
- Beef
- Calving Easy
  - Please note: Somatic cell score

**Efficiency**
- +6%

**Health**
- -1%

**Main Traits**
- TMI: 124 (80%) MI: 129 (88%)
- PRODUCTION
  - Milk yield: +1.025
  - % fat: +0.02
  - % protein: +0.05
  - kg fat: +44
  - kg protein: +40

**Fitness**
- Perceived: -4%
- Somatic cell count: +1025 (98%)
- Reliability: 88% (D. 83)

**Exterior**
- Frame
  - Fair 103
- Muscularity 110
- Feet & legs 104
- Udder
  - Small 106
- Height at cross: small 104
- Body length: short 104
- Rump width: narrow 104
- Body depth: small 104
- Rump angle: ascending 92
- Hoof angularity: sound 96
- Growth rate: sound 96
- Pasterns: weak 110
- Elbow height: low 104
- Front udder length: long 105
- Rear udder length: long 105
- Hoof angularity: weak 100
- Growth rate: weak 100
- Udder cleanliness: 124

**Milk Performance**
- First lactation: 117.066
- 2nd lactation: 9.939
- 3rd lactation: 10.066

**Breeder:** Berger Robert, Taufkirchen
**RUMBO**

**Milk**

**Protein**

**Udder**

Please note: **Feet & legs**

**EFFICIENCY +4%**

**HEALTH +4%**

**MAIN TRAITS**

- TMI: 117 (98%)
- MI: 114 (93%)

**PRODUCTION**

- Kgs of milk: +560
- % fat: -0.14
- % protein: +0.08
- kg fat: +12
- kg protein: +26

**FITNESS**

- Birth: 10.04.2008
- Breeder: Melf Georg, Ascholding
- DE 09 42637462

---

**SCHMOTTI**

**Outcross Bloodline**

**Fertility**

**Allrounder**

Please note:

**EFFICIENCY +5%**

**HEALTH +3%**

**MAIN TRAITS**

- TMI: 120 (76%)
- MI: 117 (82%)

**PRODUCTION**

- Kgs of milk: +758
- % fat: -0.07
- % protein: -0.05
- kg fat: +26
- kg protein: +22

**FITNESS**

- Birth: 19.09.2011
- Breeder: Zollner Richhard, Pfaffing
- DE 09 44667995

---

**BEEF**

- Daily net gain: 116
- Carcass percentage: 97
- Eurotrade class: 108
VLADO

**Udder and Feet & legs**

**Beef index**

Please note:

- late maturing

---

**EFFICIENCY**

+5%

**HEALTH**

+2%

**MAIN TRAITS**

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</tr>
<tr>
<td>PB</td>
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<td>89%</td>
</tr>
<tr>
<td>SP</td>
<td>106</td>
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</tr>
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**PRODUCTION**

Reliability 99% | D. 1.218

<table>
<thead>
<tr>
<th>Kg of milk</th>
<th>% fat</th>
<th>% protein</th>
<th>kg fat</th>
<th>kg protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>+642</td>
<td>-0.16</td>
<td>+14</td>
<td>+16</td>
<td></td>
</tr>
</tbody>
</table>

**FITNESS**

Reliability 99% | D. 2.254

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>FertP</td>
<td>111</td>
<td>99%</td>
</tr>
<tr>
<td>CPp</td>
<td>106</td>
<td>99%</td>
</tr>
<tr>
<td>VI</td>
<td>109</td>
<td>99%</td>
</tr>
<tr>
<td>Long</td>
<td>110</td>
<td>90%</td>
</tr>
<tr>
<td>SCC</td>
<td>103</td>
<td>99%</td>
</tr>
</tbody>
</table>

**EXTERIOR**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Muscularity</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Feet &amp; legs</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Udder</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Height at cross</td>
<td>small</td>
<td>large</td>
</tr>
<tr>
<td>Body length</td>
<td>short</td>
<td>long</td>
</tr>
<tr>
<td>Body depth</td>
<td>small</td>
<td>deep</td>
</tr>
<tr>
<td>Body angle</td>
<td>ascending</td>
<td>stepped</td>
</tr>
<tr>
<td>Body angularity</td>
<td>straight</td>
<td>scaled</td>
</tr>
<tr>
<td>Body development</td>
<td>slender</td>
<td>dry</td>
</tr>
<tr>
<td>Pasterns</td>
<td>weak</td>
<td>strong</td>
</tr>
<tr>
<td>Reel height</td>
<td>low</td>
<td>steep</td>
</tr>
<tr>
<td>Rear udder length</td>
<td>short</td>
<td>long</td>
</tr>
<tr>
<td>Fore udder length</td>
<td>short</td>
<td>long</td>
</tr>
<tr>
<td>Udder depth</td>
<td>deep</td>
<td>high</td>
</tr>
<tr>
<td>Test length</td>
<td>short</td>
<td>long</td>
</tr>
<tr>
<td>Test conditions</td>
<td>weak</td>
<td>strong</td>
</tr>
<tr>
<td>Foet test placement</td>
<td>outwards</td>
<td>inwards</td>
</tr>
<tr>
<td>Rear test placement</td>
<td>outwards</td>
<td>inwards</td>
</tr>
<tr>
<td>Udder cleanness</td>
<td>add. Tends</td>
<td>clean udder</td>
</tr>
</tbody>
</table>

**BEEF**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily net gain</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>Carcass percentage</td>
<td>118</td>
<td></td>
</tr>
</tbody>
</table>

**MILK PERFORMANCE**

Reliability 99% | D. 1.254

<table>
<thead>
<tr>
<th>Lactation</th>
<th>Value</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st lactation</td>
<td>361 D</td>
<td>6.693</td>
</tr>
<tr>
<td>2nd lactation</td>
<td>111 D</td>
<td>7.596</td>
</tr>
<tr>
<td>3rd lactation</td>
<td>58 D</td>
<td>7.631</td>
</tr>
</tbody>
</table>

---

**BREEDER:** Stangl Zeno, Isen
**WOBBLER**

- Exterior
- Fitness
- Easy Calving

Please note:

**EFFICIENCY**

+8%

**HEALTH**

+7%

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>TMI 135 (88%)</th>
<th>MI 123 (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FertP</td>
<td>119 (99%)</td>
<td>114 (99%)</td>
</tr>
<tr>
<td>CPm</td>
<td>98 (55%)</td>
<td>114 (99%)</td>
</tr>
<tr>
<td>SC</td>
<td>115 (76%)</td>
<td>106 (96%)</td>
</tr>
</tbody>
</table>

**PRODUCTION**

Reliability 95% I.D. 301

<table>
<thead>
<tr>
<th>Kg of milk</th>
<th>% fat</th>
<th>% protein</th>
<th>kg fat</th>
<th>kg protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>+1.128</td>
<td>-0,20</td>
<td>-0,04</td>
<td>+30</td>
<td>+36</td>
</tr>
</tbody>
</table>

**FITNESS**

Reliability 95% I.D. 129

<table>
<thead>
<tr>
<th>Trait</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>104</td>
</tr>
<tr>
<td>Muscularity</td>
<td>110</td>
</tr>
<tr>
<td>Feet &amp; legs</td>
<td>106</td>
</tr>
<tr>
<td>Udder</td>
<td>107</td>
</tr>
<tr>
<td>Height at cross</td>
<td>104</td>
</tr>
<tr>
<td>Body length</td>
<td>102</td>
</tr>
<tr>
<td>Body depth</td>
<td>105</td>
</tr>
<tr>
<td>Body width</td>
<td>106</td>
</tr>
<tr>
<td>Hitch angle</td>
<td>107</td>
</tr>
<tr>
<td>Hind development</td>
<td>105</td>
</tr>
<tr>
<td>Pasterns</td>
<td>109</td>
</tr>
<tr>
<td>Axial length</td>
<td>105</td>
</tr>
<tr>
<td>Front udder length</td>
<td>105</td>
</tr>
<tr>
<td>Rear udder length</td>
<td>102</td>
</tr>
<tr>
<td>Front udder attachment</td>
<td>102</td>
</tr>
<tr>
<td>Udder depth</td>
<td>103</td>
</tr>
<tr>
<td>Test length</td>
<td>106</td>
</tr>
<tr>
<td>Test attachment</td>
<td>103</td>
</tr>
<tr>
<td>Front teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Rear teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Udder cleanness</td>
<td>102</td>
</tr>
</tbody>
</table>

**EXTERIOR**

Reliability 95% I.D. 129

<table>
<thead>
<tr>
<th>Trait</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>104</td>
</tr>
<tr>
<td>Muscularity</td>
<td>110</td>
</tr>
<tr>
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<tr>
<td>Udder</td>
<td>107</td>
</tr>
<tr>
<td>Height at cross</td>
<td>104</td>
</tr>
<tr>
<td>Body length</td>
<td>102</td>
</tr>
<tr>
<td>Body depth</td>
<td>105</td>
</tr>
<tr>
<td>Body width</td>
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</tr>
<tr>
<td>Hitch angle</td>
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</tr>
<tr>
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<td>105</td>
</tr>
<tr>
<td>Rear udder length</td>
<td>102</td>
</tr>
<tr>
<td>Front udder attachment</td>
<td>102</td>
</tr>
<tr>
<td>Udder depth</td>
<td>103</td>
</tr>
<tr>
<td>Test length</td>
<td>106</td>
</tr>
<tr>
<td>Test attachment</td>
<td>103</td>
</tr>
<tr>
<td>Front teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Rear teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Udder cleanness</td>
<td>102</td>
</tr>
</tbody>
</table>

**MILK PERFORMANCE**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>104</td>
</tr>
<tr>
<td>Muscularity</td>
<td>110</td>
</tr>
<tr>
<td>Feet &amp; legs</td>
<td>106</td>
</tr>
<tr>
<td>Udder</td>
<td>107</td>
</tr>
<tr>
<td>Height at cross</td>
<td>104</td>
</tr>
<tr>
<td>Body length</td>
<td>102</td>
</tr>
<tr>
<td>Body depth</td>
<td>105</td>
</tr>
<tr>
<td>Body width</td>
<td>106</td>
</tr>
<tr>
<td>Hitch angle</td>
<td>107</td>
</tr>
<tr>
<td>Hind development</td>
<td>105</td>
</tr>
<tr>
<td>Pasterns</td>
<td>109</td>
</tr>
<tr>
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<td>105</td>
</tr>
<tr>
<td>Front udder length</td>
<td>105</td>
</tr>
<tr>
<td>Rear udder length</td>
<td>102</td>
</tr>
<tr>
<td>Front udder attachment</td>
<td>102</td>
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<tr>
<td>Udder depth</td>
<td>103</td>
</tr>
<tr>
<td>Test length</td>
<td>106</td>
</tr>
<tr>
<td>Test attachment</td>
<td>103</td>
</tr>
<tr>
<td>Front teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Rear teat placement</td>
<td>108</td>
</tr>
<tr>
<td>Udder cleanness</td>
<td>102</td>
</tr>
</tbody>
</table>

**BEEF**

Daily net gain Carcass percentage Europ.trade class

104 105 105
Feet & legs  
Persistence and Longevity  
Beef index

Please note:

Efficiency

+7%

Health

+3%

Main traits

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMI</td>
<td>134 (67%)</td>
</tr>
<tr>
<td>MI</td>
<td>117 (99%)</td>
</tr>
<tr>
<td>FT</td>
<td>115 (97%)</td>
</tr>
</tbody>
</table>

Production

Kg of milk % fat % protein kg fat kg protein

+566 +0.13 -0.01 +34 +19

Fitness

FertP CPp VI Long SCC

-6% 94 (99%) 99 (99%) 113 (94%) 104 (99%)

FertV CPm Per Msp

115 (99%) 108 (99%) 119 (99%) 94 (99%)

FertDis. Cyst. M.fev. Mast. UHV

115 (99%) 111 (79%) 102 (96%) 102 (75%) 103 (98%)

Exterior

Reliability 98% | D. 5.19

Frame

99

Muscularity

110

Feet & legs

102

Udder

112

Height at cross

small

large

96

Body length

short

long

152

Udder length

short

long

152

Body depth

small

large

102

Udder depth

small

large

102

Rump

ascending

sloped

96

Rump development

swollen

dry

105

Pasterns

weak

strong

111

Angle

level

stayed

104

Rump angle

level

stayed

104

Udder attachment

weak

strong

106

Udder length

short

long

112

Teat length

short

long

104

Teat development

weak

strong

97

Teat attachment

weak

strong

106

Teat length

short

long

104

Teat development

weak

strong

97

Teat attachment

weak

strong

106

Udder cleanness

extra

clean

108

Milking performance

1st lactation 2nd lactation 3rd lactation

1.260 D. 6.756 4.23 286 3.43 232

92 D. 7.538 4.32 326 3.54 267

64 D. 7.989 4.26 340 3.50 280

Breed: Fleckvieh

InSire

Global Fleckvieh
**DAX**

**EFFICIENCY**

- +6%

**HEALTH**

- +3%

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>TM 111 (71%)</th>
<th>ML 122 (75%)</th>
<th>Reliability 75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg of milk</td>
<td>+493</td>
<td>+0,21</td>
<td>+10,767</td>
</tr>
<tr>
<td>% fat</td>
<td>+0,12</td>
<td>+3,98</td>
<td>+3,33</td>
</tr>
<tr>
<td>% protein</td>
<td>+37</td>
<td>+2,37</td>
<td>+3,33</td>
</tr>
<tr>
<td>kg protein</td>
<td>+27</td>
<td>+1,56</td>
<td>+1,56</td>
</tr>
</tbody>
</table>

**PRODUCTION**

- 2/2 10.767 4,49 3,31 842

**FITNESS**

- 2/2 9.934 4,35 3,39 769

**EXTERIOR**

- Reliability 71%

**Udder**

- +6%

**Components**

- +3%

**Frame**

- Please note:

**BEEF**

- Daily net gain 112
- Carcass percentage 100
- Eurotrade class 113

---

**EPINAL**

**EFFICIENCY**

- +9%

**HEALTH**

- +3%

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>TM 135 (66%)</th>
<th>ML 130 (70%)</th>
<th>Reliability 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg of milk</td>
<td>+1.413</td>
<td>+0,16</td>
<td>+1.109</td>
</tr>
<tr>
<td>% fat</td>
<td>-0,11</td>
<td>+3,98</td>
<td>+3,98</td>
</tr>
<tr>
<td>% protein</td>
<td>+44</td>
<td>+2,37</td>
<td>+2,37</td>
</tr>
<tr>
<td>kg protein</td>
<td>+40</td>
<td>+1,56</td>
<td>+1,56</td>
</tr>
</tbody>
</table>

**PRODUCTION**

- 2/2 9.772 3,98 3,54 735

**FITNESS**

- 2/2 10.043 4,47 3,78 629

**EXTERIOR**

- Reliability 66%

**Udder**

- +6%

**Components**

- +3%

**Frame**

- Please note:

**BEEF**

- Daily net gain 119
- Carcass percentage 101
- Eurotrade class 106

---

---
**HARIBO**

- **Persistence**
- **Milk**
- **Cow Family**

Please note: **Somatic cells score**

**EFFICIENCY**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily net gain</td>
<td>+9%</td>
</tr>
</tbody>
</table>

**HEALTH**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>+2%</td>
</tr>
</tbody>
</table>

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMI</td>
<td>134</td>
</tr>
<tr>
<td>MI</td>
<td>107</td>
</tr>
<tr>
<td>RT</td>
<td>111</td>
</tr>
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</table>

**PRODUCTION**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg of milk</td>
<td>+914</td>
<td>73%</td>
</tr>
</tbody>
</table>

**ENTREPRISE**

- **DE 09 3853976**
  - **HL**: 12.944
  - **3.88**
  - **711**

**RUREX**

- **DE 09 4054786**
  - **HL**: 11.762
  - **3.56**
  - **886**

**BEEF**

- **Daily net gain**: 109
- **Carcass percentage**: 102
- **Eurorad trade class**: 106

---

**HERZ**

- **Fitness**
- **alternative Bloodline**
- **Exterior**

Please note:

**EFFICIENCY**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily net gain</td>
<td>+7%</td>
</tr>
</tbody>
</table>

**HEALTH**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>+2%</td>
</tr>
</tbody>
</table>

**MAIN TRAITS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMI</td>
<td>131</td>
</tr>
<tr>
<td>MI</td>
<td>121</td>
</tr>
<tr>
<td>RT</td>
<td>115</td>
</tr>
</tbody>
</table>

**PRODUCTION**

<table>
<thead>
<tr>
<th>Trait</th>
<th>% Change</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg of milk</td>
<td>+747</td>
<td>70%</td>
</tr>
</tbody>
</table>

**BEEK**

- **DE 09 4973115**
  - **HL**: 12.169
  - **4.68**
  - **3.36**
  - **1015**

**HUTMANN**

- **DE 09 4255615**
  - **HL**: 12.164
  - **3.85**
  - **821**

**HUTERA**

- **DE 09 4015478**
  - **HL**: 12.162
  - **3.97**
  - **886**

**WINNIPEG**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily net gain</td>
<td>109</td>
</tr>
<tr>
<td>Carcass percentage</td>
<td>103</td>
</tr>
<tr>
<td>Eurorad trade class</td>
<td>110</td>
</tr>
</tbody>
</table>

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**EXTERIOR**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>105</td>
</tr>
<tr>
<td>Muscularity</td>
<td>109</td>
</tr>
<tr>
<td>Fert &amp; legs</td>
<td>113</td>
</tr>
<tr>
<td>Udder</td>
<td>115</td>
</tr>
<tr>
<td>Height at cross</td>
<td></td>
</tr>
<tr>
<td>Body length</td>
<td></td>
</tr>
<tr>
<td>Udder length</td>
<td></td>
</tr>
<tr>
<td>Face length</td>
<td></td>
</tr>
<tr>
<td>Breast length</td>
<td></td>
</tr>
<tr>
<td>Hoof development</td>
<td></td>
</tr>
<tr>
<td>Pat Moran</td>
<td></td>
</tr>
<tr>
<td>Fore leg</td>
<td></td>
</tr>
<tr>
<td>Hind leg</td>
<td></td>
</tr>
<tr>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td>Fore feet</td>
<td></td>
</tr>
<tr>
<td>Hind feet</td>
<td></td>
</tr>
<tr>
<td>Hoof angle</td>
<td></td>
</tr>
<tr>
<td>Udder length</td>
<td></td>
</tr>
<tr>
<td>Udder width</td>
<td></td>
</tr>
<tr>
<td>Udder height</td>
<td></td>
</tr>
<tr>
<td>Udder depth</td>
<td></td>
</tr>
<tr>
<td>Udder thickness</td>
<td></td>
</tr>
<tr>
<td>Udder cleanliness</td>
<td></td>
</tr>
<tr>
<td>Teat length</td>
<td></td>
</tr>
<tr>
<td>Teat width</td>
<td></td>
</tr>
<tr>
<td>Teat roughness</td>
<td></td>
</tr>
<tr>
<td>Teat placement</td>
<td></td>
</tr>
<tr>
<td>Udder cleanliness</td>
<td></td>
</tr>
</tbody>
</table>

**FITNESS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FertDis.</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>69%</td>
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</tbody>
</table>

---

**EXTERIOR**

<table>
<thead>
<tr>
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<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>105</td>
</tr>
<tr>
<td>Muscularity</td>
<td>110</td>
</tr>
<tr>
<td>Fert &amp; legs</td>
<td>112</td>
</tr>
<tr>
<td>Udder</td>
<td>105</td>
</tr>
<tr>
<td>Height at cross</td>
<td></td>
</tr>
<tr>
<td>Body length</td>
<td></td>
</tr>
<tr>
<td>Udder length</td>
<td></td>
</tr>
<tr>
<td>Face length</td>
<td></td>
</tr>
<tr>
<td>Breast length</td>
<td></td>
</tr>
<tr>
<td>Hoof development</td>
<td></td>
</tr>
<tr>
<td>Pat Moran</td>
<td></td>
</tr>
<tr>
<td>Fore leg</td>
<td></td>
</tr>
<tr>
<td>Hind leg</td>
<td></td>
</tr>
<tr>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td>Fore feet</td>
<td></td>
</tr>
<tr>
<td>Hind feet</td>
<td></td>
</tr>
<tr>
<td>Hoof angle</td>
<td></td>
</tr>
<tr>
<td>Udder length</td>
<td></td>
</tr>
<tr>
<td>Udder width</td>
<td></td>
</tr>
<tr>
<td>Udder height</td>
<td></td>
</tr>
<tr>
<td>Udder depth</td>
<td></td>
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<td>Udder thickness</td>
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<tr>
<td>Udder cleanliness</td>
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<td>Teat width</td>
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</tr>
<tr>
<td>Teat roughness</td>
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<td>Teat placement</td>
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<tr>
<td>Udder cleanliness</td>
<td></td>
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**FITNESS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
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<tbody>
<tr>
<td>FertDis.</td>
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</tr>
<tr>
<td>Reliability</td>
<td>67%</td>
</tr>
</tbody>
</table>
HOUINDI

Bloodline
Allrounder

Please note:

EFFICIENCY +8%

HEALTH +4%

MAIN TRAITS

TMI 128 (67%)

Bl 100 (65%)

MI 126 (72%)

RT 113 (70%)

PRODUCTION

Kg of milk % fat % protein kg fat kg protein

+857 +0,09 -0,01 +43 +29

FITNESS

Reliability 72%

MAIN TRAITS

EXTERIOR

RELATIVITY 67%

Frame

101

Muscularity

109

Feet & legs

110

Udder

109

Height at withers small large 100

Body length short long 102

Bump width narrow wide 105

Body depth small deep 105

Bump angle ascending ascending 99

Hock angulation straight wide 91

Hock development swollen dry 90

Paternal weak strong 114

Elevated off angles steep angles 114

Face udder length short long 106

Rear udder length short long 106

Face udder attachment weak strong 110

Udder depth deep shallow 107

Teat length short long 107

Teat placement forwards backwards 107

Front teat placement outwards inwards 104

Rear teat placement outwards inwards 104

Udder cleanliness add. Teats 104

EUPHORIA

HB

HOUTERA

DE 09 3853976

HL 2 8,88 3,82 388 912

WANDERA

DE 09 3853976

HL 2 9,91 5,32 388 912

HEDIX

DE 09 3975746

HL 8 10,394 4,00 3,43 772

HUTEREX

DE 09 42846896

HL 2 9,072 3,97 3,54 606

HEIDI

DE 09 3975746

HL 8 10,394 4,00 3,43 772

HUSCHER

DE 09 3975746

HL 8 10,394 4,00 3,43 772

HUTMANN

DE 09 48793353

HL 10,90 063

K A B

BK AIA2

Bloodline: Pletzer Georg, Pfaffenhofen
DE 09 48793353

BREEDER: Pletzer Georg, Pfaffenhofen
DE 09 48793353

BEEF

Daily net gain 102

Carcass percentage 95

EuropTrade class 105

MAGIC

Free of Winnipeg, Vanstein, Rumba Blood

Fitness

Exterieur

Please note:

Milk speed

EFFICIENCY +7%

HEALTH +6%

MAIN TRAITS

TMI 125 (69%)

Bl 104 (65%)

MI 116 (72%)

RT 117 (71%)

PRODUCTION

Kg of milk % fat % protein kg fat kg protein

+710 -0,08 -0,03 +23 +22

FITNESS

Reliability 72%

MAIN TRAITS

EXTERIOR

RELATIVITY 67%

Frame

50

Muscularity

108

Feet & legs

104

Udder

109

Height at withers small large 99

Body length short long 94

Bump width narrow wide 97

Body depth small deep 97

Bump angle ascending ascending 97

Hock angulation straight wide 91

Hock development swollen dry 90

Paternal weak strong 114

Elevated off angles steep angles 114

Face udder length short long 106

Rear udder length short long 106

Face udder attachment weak strong 110

Udder depth deep shallow 107

Teat length short long 107

Teat placement forwards backwards 107

Front teat placement outwards inwards 104

Rear teat placement outwards inwards 104

Udder cleanliness add. Teats 104

Europe Dam of Magic

Mosandl Martin, Ottmaring

Bloodline: Mosandl GbR, Dietfurt

DE 09 37373493

BREEDER: Mosandl GbR, Dietfurt

DE 09 37373493

BEEF

Daily net gain 100

Carcass percentage 100

EuropTrade class 107
MINT

**Milk**
- Udder and Feet & legs
- Udder health and Milkspeed

Please note:
- Persistence

**EFFICIENCY**
- +9%

**HEALTH**
- +7%

**MAIN TRAITS**
- TMI 134 (71%)
- MI 121 (74%)

**PRODUCTION**
- Kp of milk
  - % fat: +1.059
  - % protein: +0.14
  - kg fat: +32
  - kg protein: +26

**FITNESS**
- FertP +633
- FertV 107

**EXTERIOR**
- Low angles steep angles
- Hoof height
- Ascending sloped
- Rump angle

- Outwards inwards
- Front teat placement
- Outwards
- Udder cleanliness

**BEEF**
- Daily net gain 115
- Carcass percentage 101
- Europtrade class 106

---

MISSION Pp

**Exterior**
- Easy Calving
- Udder

Please note:
- Persistence

**EFFICIENCY**
- +5%

**HEALTH**
- +7%

**MAIN TRAITS**
- TMI 120 (65%)
- MI 116 (70%)

**PRODUCTION**
- Kp of milk
  - % fat: +633
  - % protein: +0.04
  - kg fat: +23
  - kg protein: +22

**FITNESS**
- FertP +633
- FertV 107

**EXTERIOR**
- Low angles steep angles
- Hoof height
- Ascending sloped
- Rump angle

- Outwards inwards
- Front teat placement
- Outwards
- Udder cleanliness

**BEEF**
- Daily net gain 103
- Carcass percentage 94
- Europtrade class 99

---
MONTERO

**Milk**
**Milkspeed**
**Fitness**

Please note:

- **Efficiency**: +8%
- **Health**: +4%

**Main Traits**

- **TMI**: 128 (66%)
- **MI**: 122 (72%)

**Production**

- Kg of milk
  - % fat: 4,05
  - % protein: 3,54
  - kg fat: 770
  - kg protein: 770

**Reliability**: 72%

**Main Traits**

- **Performance**:
  - SCC: +1.058
  - Long: -0.18
  - VI: -0.04
  - CPp: +29
  - FertP: +33

**Fitness**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Health**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Exterior**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Polled**
**Fitness**

Please note:

- **Efficiency**: +11%
- **Health**: +4%

**Main Traits**

- **TMI**: 127 (65%)
- **MI**: 122 (72%)

**Production**

- Kg of milk
  - % fat: 4,05
  - % protein: 3,54
  - kg fat: 770
  - kg protein: 770

**Reliability**: 72%

**Main Traits**

- **Performance**:
  - SCC: +1.058
  - Long: -0.18
  - VI: -0.04
  - CPp: +29
  - FertP: +33

**Fitness**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Health**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Exterior**

- **Percentage**:
  - Udder: 109
  - Re: 102
  - TMI: 127
  - SCC: 102
  - Per: 100
  - Mfp: 112

**Polled**
**Fitness**

Please note:
**MORATA**

**EFFICIENCY**  
- Milk: +8%

**MAIN TRAITS**
- TMI 130 (60%)
- Ml 128 (64%)

**PRODUCTION**
- Kgs of milk +969
- % fat +0.02
- % protein +0.04
- kg fat +42
- kg protein +37

**FITNESS**
- Field 100 (60%)
- FertV 104 (38%)
- FertDis. 115 (67%)

**HEALTH**
- Reliability 64%

**EXTERIOR**
- Reliability 61%

**BEEF**
- Daily net gain 108
- Carcass percentage 92
- Eurotrade class 96

---

**MOYA**

**EFFICIENCY**  
- Calving easy

**MAIN TRAITS**
- TMI 123 (65%)
- Ml 114 (75%)

**PRODUCTION**
- Kgs of milk +530
- % fat -0.02
- % protein +0.01
- kg fat +21
- kg protein +19

**FITNESS**
- Reliability 75%

**EXTERIOR**
- Reliability 61%

**BEEF**
- Daily net gain 119
- Carcass percentage 104
- Eurotrade class 110

---

**Lorena 2nd calf**

**LORENA**
- DE 09 46687095
- Ml 9.088
- Hl 1. 8.045
- Hl 2. 9.961

**EXTERIOR**
- Height at cross: small
- Body length: short
- Body depth: small
- Body width: narrow
- Bump angle: ascending
- Udder development: sound
- Udder: weak
- Width at ear: 83
- Front udder length: short
- Rear udder length: short
- Udder attachment: weak
- Udder thickness: 97
- Exterior traits: 106
- Udder cleanliness: add. Traits

---

**MADU**
- DE 09 46790093
- Ml 8.088
- Hl 1. 8.045

**EXTERIOR**
- Height at cross: small
- Body length: short
- Body depth: small
- Body width: narrow
- Bump angle: ascending
- Udder development: sound
- Udder: weak
- Width at ear: 83
- Front udder length: short
- Rear udder length: short
- Udder attachment: weak
- Udder thickness: 97
- Exterior traits: 106
- Udder cleanliness: add. Traits

---

**LORENA**
- DE 09 47380093
- Ml 8.088
- Hl 1. 8.045

**EXTERIOR**
- Height at cross: large
- Body length: long
- Body depth: deep
- Body width: wide
- Bump angle: ascending
- Udder development: sound
- Udder: weak
- Width at ear: 83
- Front udder length: short
- Rear udder length: short
- Udder attachment: weak
- Udder thickness: 97
- Exterior traits: 106
- Udder cleanliness: add. Traits

---

**LORENA**
- DE 09 47380093
- Ml 8.088
- Hl 1. 8.045

**EXTERIOR**
- Height at cross: small
- Body length: short
- Body depth: small
- Body width: narrow
- Bump angle: ascending
- Udder development: sound
- Udder: weak
- Width at ear: 83
- Front udder length: short
- Rear udder length: short
- Udder attachment: weak
- Udder thickness: 97
- Exterior traits: 106
- Udder cleanliness: add. Traits

---

**LORENA**
- DE 09 47380093
- Ml 8.088
- Hl 1. 8.045

**EXTERIOR**
- Height at cross: small
- Body length: short
- Body depth: small
- Body width: narrow
- Bump angle: ascending
- Udder development: sound
- Udder: weak
- Width at ear: 83
- Front udder length: short
- Rear udder length: short
- Udder attachment: weak
- Udder thickness: 97
- Exterior traits: 106
- Udder cleanliness: add. Traits
VOX

**Milk**

- **Udder**
- **Milk speed**

Please note:

**Efficiency**

- **+6%**

**Health**

- **+2%**

**Main Traits**

- **TMI**: 128 (69%)
- **MI**: 118 (77%)
- **RT**: 110 (77%)

**Production**

Kg of milk +742  
% fat -0.05  
% protein +0.03  
kg fat +27  
kg protein +24

**Fitness**

- **EPD**: +2%
- **Fert**: 103 (50%)
- **Cry**: 109 (76%)
- **Cry**: 110 (77%)

**Reliability**: 71%

**Exterior**

- **Frame**: 103
- **Musculature**: 98
- **Fore & legs**: 95
- **Udder**: 113
  - Height at cross: small
  - Body length: short
  - Hoof depth: deep
  - Body depth: small
  - Body length: short
  - Hoof development: dried
  - Weight angle: steep angles
  - Teat length: long
  - Teat thickness: thin
  - Depth thickness: strong

**Reliability**: 66%

---

WALK

**Milk**

- **Fitness**
- **Udder**

Please note:

**Efficiency**

- **+14%**

**Health**

- **+9%**

**Main Traits**

- **TMI**: 147 (68%)
- **MI**: 128 (62%)
- **RT**: 134 (67%)

**Production**

Kg of milk +1.173  
% fat -0.09  
% protein +0.06  
kg fat +41  
kg protein +36

**Fitness**

- **EPD**: +2%
- **Fert**: 122 (39%)
- **Cry**: 105 (50%)
- **Cry**: 106 (55%)

**Reliability**: 62%

**Exterior**

- **Frame**: 84
- **Musculature**: 107
- **Fore & legs**: 99
- **Udder**: 124
  - Height at cross: small
  - Body length: short
  - Hoof depth: deep
  - Body length: short
  - Body length: short
  - Hoof development: dried
  - Weight angle: steep angles
  - Teat length: long
  - Teat thickness: thin
  - Depth thickness: strong

**Reliability**: 57%

---

Lorena, Died of Vox  
Schurer Hammon GbR

**BEEF**

- **Daily gain**: 117  
- **Carcase percentage**: 106  
- **Carcass grade**: 110

Lorena, Died of Vox  
Schurer Hammon GbR

**BEEF**

- **Daily gain**: 116  
- **Carcase percentage**: 111  
- **Carcass grade**: 113
**WATZMANN**

**Milkindex**
- Feet & legs
- Somatic cell score

**Breeder:** Riebensahm Uwe, Reichelsheim
**LOM:** DE 06 66439361
**Dob:** 27.05.2013 ET
**Global Fleckvieh 2016/2017 Global Fleckvieh**

**Latina, Dam of Watzmann 1st calf**
- Uwe Riebensahm, Reichelsheim

**Efficiency**
- +7%

**Health**
- -2%

**Main Traits**
- TMi 122 (67%)  
- MI 122 (71%)
- FT 101 (70%)

**Production**
- Reliability 71%

**Health**
- HB: aAa

**Exterior**
- Frame: 102
- Muscularity: 104
- Feet & legs: 115
- Udder: 105
- Height at cross: small
- Body length: short
- Rump width: narrow
- Body depth: small
- Bump angle: ascending
- Rump angularity: straight
- Hoof development: slender
- Pasterns: weak
- Axial height: low
- Front udder length: short
- Rear udder length: short
- Front udder attachment: weak
- Rump depth: deep
- Test length: short
- Test thickness: thin
- Fore test placement: outwards
- Hinternis: insert
- Udder cleanliness: add. Teats

**BEEF**
- Daily net gain: 104
- Carcass percentage: 104
- Eurotrade class: 99

**WOITL**

**Fitness**
- Feet & legs

**Breeder:** Schechner Lothar, Tuntenhausen
**LOM:** DE 09 49646601
**Dob:** 06.10.2014 ET
**Global Fleckvieh 2016/2017 Global Fleckvieh**

**Ukulele 4th calf**
- Lothar Schechner, Beyharting

**Efficiency**
- +8%

**Health**
- +6%

**Main Traits**
- TMi 134 (61%)  
- MI 116 (64%)
- FT 121 (63%)

**Production**
- Reliability 66%

**Health**
- HB: aAa

**Exterior**
- Frame: 99
- Muscularity: 98
- Feet & legs: 115
- Udder: 105
- Height at cross: small
- Body length: short
- Rump width: narrow
- Body depth: small
- Bump angle: ascending
- Rump angularity: straight
- Hoof development: slender
- Pasterns: weak
- Axial height: low
- Front udder attachment: strong
- Rear udder length: short
- Front udder length: short
- Front udder attachment: strong
- Rump depth: deep
- Test length: short
- Test thickness: thin
- Fore test placement: outwards
- Hinternis: insert
- Udder cleanliness: add. Teats

**BEEF**
- Daily net gain: 115
- Carcass percentage: 114
- Eurotrade class: 112
**Heredity of polled genes**

### COW

<table>
<thead>
<tr>
<th>Polled genotype</th>
<th>Homozygous polled</th>
<th>Heterozygous polled</th>
<th>Horned</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>PP 100 % 100 % polled</td>
<td>PP 50 %, PP 50 % 100 % polled</td>
<td>PP 50 % 100 % horned</td>
</tr>
<tr>
<td>Pp</td>
<td>Pp 100 % 100 % horned</td>
<td>Pp 50 % PP 50 % PP 75 % horned, 25 % horned</td>
<td>Pp 50 % PP 50 % PP 50 % horned</td>
</tr>
</tbody>
</table>

### BULL

<table>
<thead>
<tr>
<th>Polled genotype</th>
<th>Homozygous polled</th>
<th>Heterozygous polled</th>
<th>Horned</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>PP 100 % 100 % polled</td>
<td>PP 50 % PP 50 % PP 50 % PP 50 % horned, 50 % horned</td>
<td>PP 100 % 100 % horned</td>
</tr>
<tr>
<td>Pp</td>
<td>Pp 100 % 100 % horned</td>
<td>Pp 50 % PP 50 % PP 75 % horned, 25 % horned</td>
<td>Pp 50 % PP 50 % PP 50 % horned</td>
</tr>
</tbody>
</table>

Note: The table above shows the heredity of polled genes for cows and bulls. It indicates the percentage of each genotype and their respective categories (polled, horned).
CONTACT
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