

# CHANGES IN THE ESTIMATION OF BREEDING VALUES

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 value-

During the past, the upbringing 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 upbringing 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 %)
- Upbringing phase 1: 3. until 30th day (male and female; weighting 24 %)
- Upbringing phase 2: 31st day until 10 months (male; weighting 12 %)
- Upbringing 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 weightings

## Changes of genetic correlations

All characteristics, we breed with, have negative or positive correlations, which have been newly calculated recently. The correlations between the milk char-



Inka, mother of Mint, after for calves. Today she's expecting her 6th calf. She is perfect in conformation, fitness, meat and milk production. She finished her best lactation with 11.147 kg milk - 3.63 % fat - 3.49 % protein.

acteristics and the meat- resp. fitness-characteristics are predominantly 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 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 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 Sire-Match. 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*

Linda, mother of Incubus, demonstrates with 9 calvings and 11.147 kg of milk 3.63 % fat 3.49 % protein perfectly the Fleckvieh breeding goal.

