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FLECK VIEH CHANGES

International Fleckvieh Magazine presented by FLECKVIEH AUSTRIA www.fleckvieh.at

Fleckvieh Changes
World Simmental Fleckvieh Congress 2022

Single Step
The genomics upgrade

Breeding value estimation
December 2021 Comments & Top list

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FLECKVIEH CHANGES

World Simmental Fleckvieh Congress & Austrian Fleckvieh Show – Austria 2022

ING. REINHARD PFLEGER, FLECKVIEH AUSTRIA – VIENNA, AUSTRIA

Dear leaders and breeders around the world, dear members of the extended Fleckvieh family, on behalf of Fleckvieh Austria and the WSFF, we are delighted to announce that Austria will host two outstanding events from August 30 to September 4, 2022.

WORLD SIMMENTAL FLECKVIEH CONGRESS
AUSTRIA 2022
30.08.–04.09.

BUNDES FLECKVIEH SCHAU '22
FREISTADT
03.–04.09.2022

2022 World Simmental Fleckvieh Congress
A magnificent showcase at just the right time

The time has finally come: After more than 25 years, as Austria will again host the World Simmental Fleckvieh Congress, set to take place from August 30 to September 4, 2022. The main conference venue is the Parkhotel Schönbrunn in Vienna. This means that the professional highlights of the first part of the congress (from Tuesday to Friday) will also take place in the Vienna region. We will then move on to Linz and Freistadt, where we will present the country's finest Fleckvieh cows to a national and international audience at the Austrian Fleckvieh Exhibition during the weekend of September 3 and 4. A premium auction and the next edition of the Fleck Score World Cup are planned for Saturday evening.

For our international guests, especially those from more distant parts of Europe and from other continents, we have planned a post-congress agrotour of various parts of Austria. Until September 8, our guests will thus have the opportunity to visit other leading Fleckvieh breeding farms. In addition, Austria's culture and nature will also feature prominently.

What do we want to show to the world?
As the country with the highest number of Fleckvieh cattle in the world, Austria is firmly on the path to success. We have seen positive developments in almost all our breeding parameters, and major progress has been made in the performance of the animals, which was and is an important factor for the international visibility of Austrian Fleckvieh cattle. At the same time, the economically sound weighting of the total merit index has enabled us to maintain the breed's core strengths in udder health, fertility and robustness.

Fleckvieh – dual-purpose perfection
Fleckvieh's suitability for dual-purpose use is the breed's true trump card. The ability to combine milk and meat in one animal is an economic aspect that clearly speaks in favor of Fleckvieh cattle. The option of using animals that are not needed for breeding to produce high-quality beef is part of the solution to today's challenges of sustainability and environmental efficiency.

The fact that the promotion of dual-purpose cattle and poultry has, for the first time, also become government policy in Austria confirms that the Fleckvieh breed is on the right track in terms of public perception.

As the host country of the World Simmental Fleckvieh Congress, our aim is to demonstrate the aforementioned economic and ecological advantages of our Fleckvieh breed. At the same time, the focus will also be on global megatrends and their impact on cattle breeding and agriculture as a whole.

On the one hand, global challenges such as digitalization and the associated accelerated development of new technologies are now being felt across all sectors. On the other hand, the climate impact of cattle is currently the subject of heated public debates.

By choosing "Fleckvieh Changes" as the motto of the congress, we want to show that we are not only aware of the challenges, but that we can also offer convincing answers. Fleckvieh is changing the world of cattle, as it enables dairy farming with robust cows and is the most eco-efficient form of livestock production.

The Austrian way – "Fleckvieh Changes"!
On average, the Austrian Fleckvieh cow again produces more than four calves in her lifetime. Fleckvieh thus leads the international rankings of cattle breeds in terms of longevity, sustainability and efficiency. With genomic selection, we also have a modern tool for cattle breeding at our disposal. Our consistent efforts to implement the joint breeding program have produced the desired results. In particular, these improvements are reflected in the fitness traits, and in future, we also expect progress with regard to new traits such as hoof health, metabolic stability, feed efficiency and milking behavior.

"Fleckvieh Changes" also applies in the sense that we, in contrast to others, continue to be optimistic about the prospects of keeping high-level breeding in the hands of farmers and implementing a holistic breeding strategy. This is only possible through consistent breeding work and the consistent use of modern techniques. Effective genome selection requires that the breeding population be as large as possible, which in turn makes intensive international cooperation essential.

Strengthening international cooperation and disseminating the successful genetics of Austrian Fleckvieh cattle worldwide is thus also one of the goals of the 2022 World Simmental Fleckvieh Congress in Austria.

For more up-to-date information, please visit www.fleckvieh.at.

We look forward to seeing all friends of Fleckvieh in Austria again in the fall of 2022.

Ing. Reinhard Pfleger
CEO

Ing. Sebastian Auernig
President

FLECKVIEH CHANGES

World Simmental Fleckvieh Congress and National Fleckvieh Exhibition Austria 2022

You are cordially invited to this magnificent event!

VIENNA	**Parkhotel Schönbrunn**
August 30	Welcome – meetings – cultural program – opening ceremony with country presentations
August 31	Meetings – cultural program – top Fleckvieh farm – visit to a "Heurigen" wine tavern in Vienna
September 1	WSFF General Assembly with a series of lectures on the following topic: "Fleckvieh Changes – Why Fleckvieh is changing the world of cattle" Top Fleckvieh farm – cultural program – gala dinner at the Vienna Rathaus
September 2	Insemination station – gala dinner and excursion by boat in Linz
FREISTADT	**Raiffeisen Fleckvieh Arena**
September 3	Insemination station – top Fleckvieh farm – Start of the National Fleckvieh Exhibition Fleck Score World Cup – premium auction – show program
September 4	National Fleckvieh Show featuring Austria's finest animals
AUSTRIA	**Post-congress agrotour**
September 5	Mixing business and culture in Upper Austria
September 6	Salzburg and the charm of Mozart's birthplace
September 7	The magic of the Austrian Alps in Carinthia
September 8	The secrets of Styrian cattle breeding I Return to Vienna

Don't wait to be told about it – experience it yourself!

REGISTRATION will open at the end of January 2022 at www.fleckvieh.at.

FLECKVIEH AUSTRIA | geneticAUSTRIA | Raiffeisen | Bundesministerium Landwirtschaft, Regionen und Tourismus

FLECKVIEH AUSTRIA

Latest news from the breeding programme

DR. CHRISTIAN FÜRST, ZUCHTDATA – VIENNA, AUSTRIA

In the last few decades, there has been enormous progress in Austrian Fleckvieh breeding, including the joint breeding value estimation, close cooperation with Germany on the breeding programme, and the introduction of genomic selection 10 years ago. This article highlights the phenotypic and genetic advances that have been made as a result.

Table 1 shows the development of phenotypic traits in key areas since 2015. When considering the phenotypic traits, it is important to always keep in mind that they are highly dependent on the meteorological, nutritional and market situation, and even on data quality (e.g., the completeness of insemination reports with respect to the insemination index). Over the last five years, the average milk yield per lactation has increased by a remarkable 135 kg. Despite this strong increase in milk yield and its largely negative genetic correlations, most meat and fitness parameters have been stable to slightly positive. For instance, longevity has been rising slowly but steadily for many years, while lifetime performance has increased sharply by more than 600 kg per year.

That being said, the fertility parameters in the insemination index have deteriorated slightly, while the development of the calving interval is more or less stable. The further development of the somatic cell count, a particular strength of Fleckvieh cattle, is something to keep an eye on.

Positive genetic trends

Genetic traits, i.e. the average breeding values per birth cohort, are the indicator of choice for assessing long-term breeding trends. For example, one might look at the trends observed in insemination bulls or, as in this article, those relating to the female population. After all, it is this group of animals that ultimately determines a farm's economic success. Figure 1 shows the genetic trends for the main aspects of the total merit index (TMI), the milk index (MI), the beef index (BI) and the fitness index (FIT). The TMI increased by 2.0 points per year from 2000 to 2010, and by 2.4 points per year from 2010 to 2018. During the same period, the MI increased from 2.2 to 2.3 points. The BI has been virtually stable, with a slightly negative trend in the EUROP classification that has been offset by an increase in the net weight. The long-term negative FIT trend has been reversed, with an increase of 1.0 points per year since 2010.

A detailed look at the milk traits (Fig. 2) reveals an uninterrupted linear increase in milk yield (94 kg per year since 2000). However, it should also be noted that the milk components, especially the fat content, have seen a genetic decline.

As already indicated in Figure 1, the long period of decline affecting the genetic fitness indicators has finally been reversed. This clearly shows the effect of the estimated breeding values (EBV) and the inclusion of fitness traits in the TMI. For example, an EBV for longevity has been available in Austria since 1995, while the TMI, including the most important fitness traits, has been published since 1998. The genetic trends since then have been quite impressive. This also highlights the importance of developing estimated breeding values for other health traits, especially regarding hoof health and metabolism.

In terms of conformation, the marked genetic improvement, especially as regards the udder score (Fig. 4), is also clearly visible

Tab. 1: Development of selected phenotypic traits in Austrian Fleckvieh cattle since 2015

	2015	2016	2017	2018	2019	2020
Milk (kg) – herd book, all lact.	7,220	7,370	7,393	7,713	7,790	7,893
F+P (kg) – herd book, all lact.	545	558	560	584	590	599
Carcass percentage	57.3	57.4	57.2	57.2	57.3	57.3
No. of calves	3.97	3.98	3.97	4.02	4.04	4.03
Longevity (years)	3.80	3.80	3.81	3.86	3.89	3.90
Calving interval (days)	390	391	388.3	388.3	388.5	390.1
Insemination index	2.0	2.0	2.0	2.1	2.2	2.2
Som. cell count (in thousands)	180.1	176.6	175.5	181.0	183.3	186.5
Lifetime yield (kg)	28,114	28,533	28,846	29,825	30,689	31,220

Fig. 1: Genetic trends for TMI, MI, BI and FIT of Austrian Fleckvieh cows

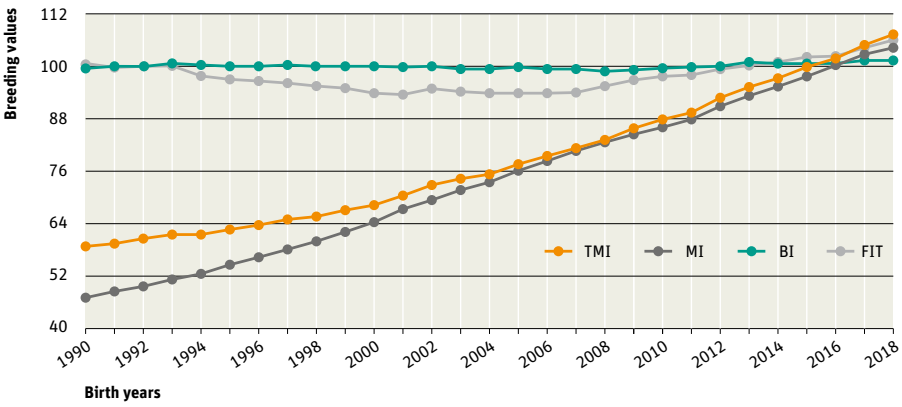


Fig. 2: Genetic trends for milk yield, fat and protein content of Austrian Fleckvieh cows

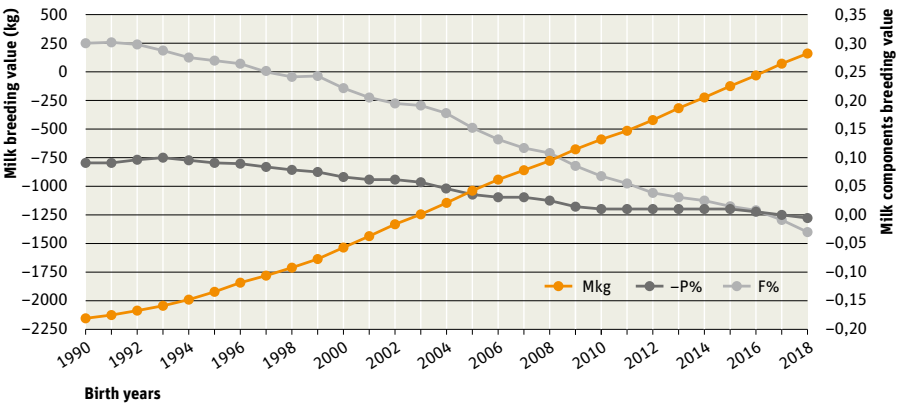


Fig. 3: Genetic trends for longevity (Long), persistency (Pers), fertility (FEI), udder health (UDH) and milking speed (Msp) of Austrian Fleckvieh cows

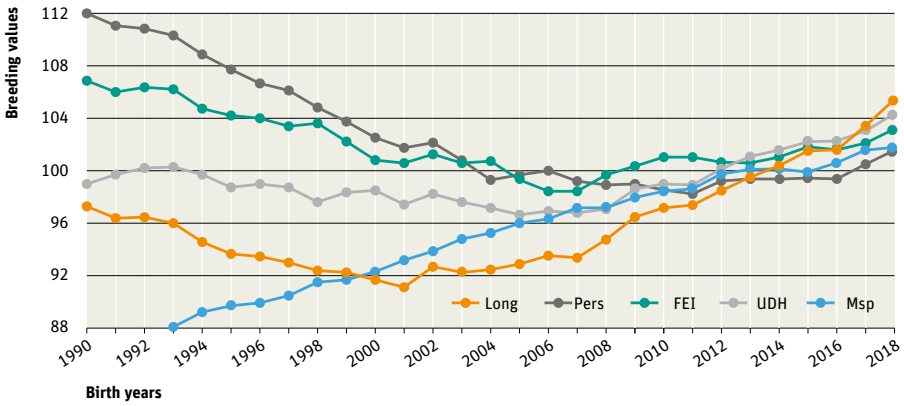


Fig. 4: Genetic trends for frame (FR), muscling (MU), feet and legs (FL) and udders (UD) of Austrian Fleckvieh cows

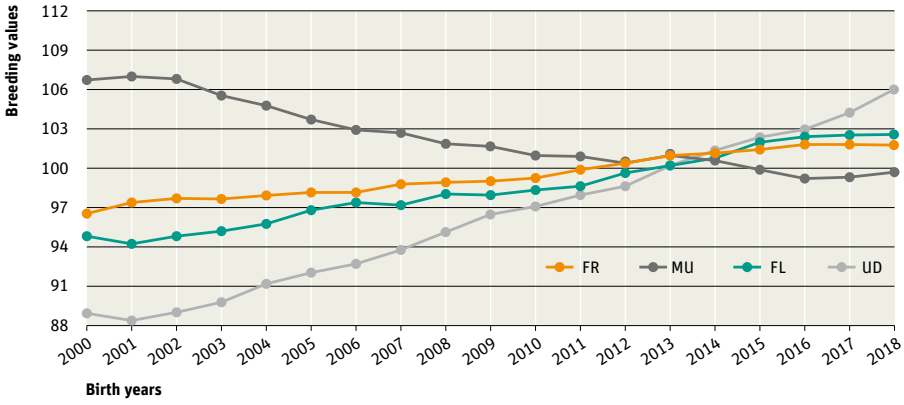
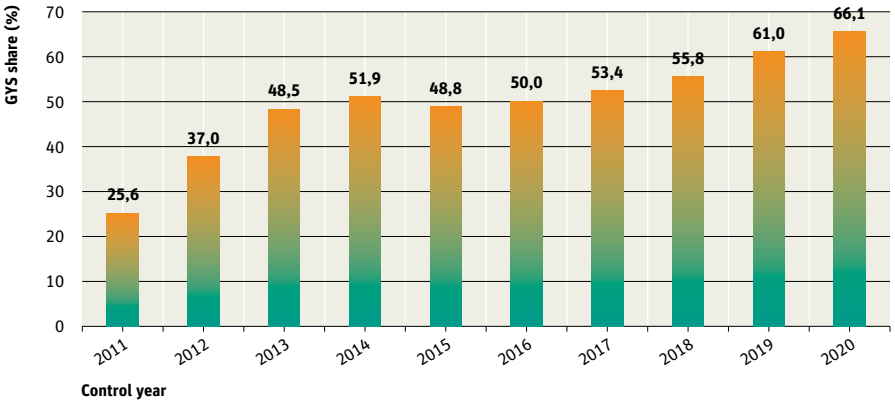


Fig. 5: Inseminations using a genomic young sire (GYS) as a share of all Fleckvieh inseminations (without other breeds, artificial inseminations only)



in practice. In the last few decades, there has also been a significant increase in the frame, especially regarding the height at cross. For some years now, efforts have been made to stabilize the cow frame through breeding. Fortunately, the trend toward ever larger cows seems to have slowed down in the last few years, a development that will hopefully continue in the future. During the same period, muscling has also decreased significantly. These genetic trends for conformation reflect the shift toward greater emphasis on milk production in Fleckvieh breeding over the past few decades. Any further declines in the genetic performance traits for muscling and carcass yield could jeopardize the positioning of Fleckvieh cattle as the leading dual-purpose breed.

High genetic level of inseminations

The goal of the Fleckvieh Austria breeding programme is to use genomic young sires (GYS) for 75 percent of all inseminations. As shown in Figure 5, we already reached a GYS share of 66.1 percent last year, based on all inseminations involving Fleckvieh bulls (i.e., excluding other breeds and natural insemination). Given that this figure continues to grow, the percentage of GYS inseminations already reached just over 70 percent in the last few months, and in some breeding associations it even exceeds 80 percent.

Ultimately, however, it is not the percentage of young bulls that is decisive, but the genetic quality of the inseminations being carried out. Figure 6 shows the average breeding values of the inseminations performed from 2018 to 2020. These breeding values are taken from December of the respective year. As this table shows, the average breeding values for all traits are above 100. The only traits that exhibit a slightly negative trend are the milk components fat content (–0.02) and protein content (0.01).

The TMI level exceeds 125 points and is therefore very high. Next comes the MI, which is in the range of 120 points, followed by the udder value at around 114 points, thus underlining the great importance of conformation in breeding practice. The FIT value is also within a highly positive range (approximately 112 points), similar to the longevity breeding value. The least consideration in the selection of insemination bulls is given to the beef index and muscling, with values only very slightly above 100. No further improvements are therefore to be expected in these traits.

The slight decreases in the TMI and the MI in 2020 compared to previous years is likely due, at least in part, to the increased use of polled bulls. The share of inseminations with polled bulls (both heterozygous and homozygous) already stood at almost 20 percent in 2020, and in the last few months of the year even reached 25 percent. Although polled genetics have already attained a considerably high standard (at least for heterozygous animals), the scores of polled bulls used were on average 2.2 TMI points and 3.6 MI points lower than those of their horned counterparts, while the milk yield was exactly 100 kg lower. Due to the strong focus on polled sires, losses in breeding progress in several economically important traits cannot be avoided.

Table 2 lists the Fleckvieh bulls that were most frequently used in 2020 (the control year). With GS MYSTERIUM Pp* (a heterozygous polled bull), a genetically polled bull tops the ranking for the first time in history. In addition, there are also two homozygous polled bulls, MAROKKO PP* and GS VERISMO PP*, among the top 20. It is notewor-

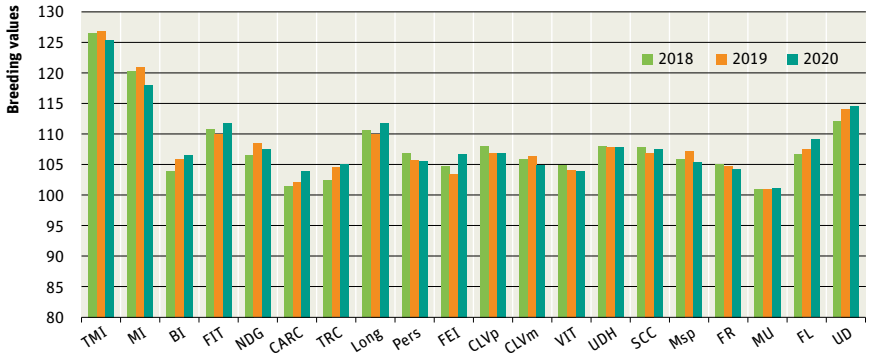
thy that no single bull stands out with an extremely high number of inseminations. Never before has such a low number of inseminations, just over 13,000, been enough to lead in the rankings. The highest figure in this regard was reached by WILLE in 2012, with over 47,000 inseminations. These relatively low numbers of inseminations per bull should definitely be seen as a positive development, as it is always advisable to spread the risks. Even if the standard sire lineages are of little importance for genetic diversity, the distribution among the different lineages is very positive. On the paternal side, the top 20 animals descend from nine different bulls, with MORELLO and HOREX having the highest number of offspring with four each.

Summary

The predominantly positive development of the phenotypic traits and genetic trends in Austrian Fleckvieh cattle is the result of intensive breeding efforts, in close cooperation with Germany and other neighboring countries. The positive genetic trends are also broadly reflected in the positive development of the phenotypic traits. In the longer term, it will certainly be important to pay even greater attention to maintaining or improving the dual-purpose traits of the Fleckvieh breed. In addition, the milk components should not be disregarded either.

The developments also show that optimal estimated breeding values are possible for traits that are difficult to breed for, such as fitness or health. The basic prerequisite for this, however, is the willingness of farmers to provide large amounts of high-quality data. This appeal applies especially to the various health traits – after all, progress in breeding is only possible with a lot of good data.

Fig. 6: Average breeding values of Fleckvieh inseminations 2018–2020 (breeding values from December of the respective year)



TMI = total merit index, MI = milk index, BI = beef index, FIT = fitness index, NDG = net daily gain, CARC = carcass percentage, TRC = EUROP trade class, Long = longevity, Pers = persistency, FEI = fertility index, CLVp = paternal calving ease, CLVm = maternal calving ease, VIT = vitality index, UDH = udder health index, SCC = somatic cell count, MSp = milkability/milking speed, FR = frame, MU = muscularity, FL = feet and legs, UD = udder

Table 2: The 20 most frequently used Fleckvieh bulls in the FLECKVIEH AUSTRIA breeding programme in control year 2020 (ZuchtData, ZWS 12/21)

Rank	Name	Year of birth	No. of calves	TMI	MI	BI	FIT	PB*	Lineage
1	GS MYSTERIUM Pp*	2017	13,726	126	114	112	115	N	MORELLO
2	WEISSENSEE	2017	13,276	131	121	101	117	N	HOREX
3	MINT	2012	11,434	113	109	94	108	Y	MORELLO
4	HURLY	2012	11,311	125	112	112	112	Y	HUCH
5	HERZSCHLAG	2014	11,086	120	132	109	80	Y	HUCH
6	SEHRGUT	2012	10,647	128	123	98	108	Y	STREIK
7	MANAUS	2018	9,245	132	126	112	106	N	MORELLO
8	IMPOSSUM	2017	8,741	127	120	107	111	N	REDAD
9	ORKA	2013	8,640	114	115	98	100	Y	HUMBERG
10	GS RENEGADE	2014	8,459	129	123	106	108	Y	ROMEN
11	MAROKKO PP*	2017	8,260	128	116	111	116	N	MORELLO
12	DANILO	2018	8,244	123	114	105	114	N	DIRIGENT
13	VADIN	2013	7,964	118	108	124	102	Y	REDAD
14	HERZKLOPFEN	2018	7,312	132	17	105	95	N	HUCH
15	GS WERTVOLL	2014	7,219	110	119	90	94	Y	HOREX
16	EVERGREEN	2013	7,094	118	117	101	102	Y	EGEL
17	SUNRISE	2017	6,889	130	123	112	108	N	STREIK
18	GS VERISMO PP*	2018	6,509	127	115	114	115	N	REDAD
19	GS WHAT ELSE	2017	6,484	125	120	100	110	N	HOREX
20	GS WOIWODE	2017	6,083	132	115	101	130	N	HOREX

*PB = Proven bull / Y = yes, N = no

SINGLE STEP

The genomics upgrade

DR. HERMANN SCHWARZENBACHER, DR. CHRISTIAN FÜRST, JUDITH HIMMELBAUER
ZUCHTDATA – VIENNA, AUSTRIA
(on behalf of the DE-AT-CZ Breeding Value Estimation Team)

April 2021 marks a historic date for the joint genetic evaluation in Austria, Germany and the Czech Republic. Ten years after its introduction, we have taken genomic selection in Fleckvieh cattle to the next level with the launch of the single-step method. The aim of this article is to explain the new method and to provide an overview of the changes in breeding values that can be derived from it.

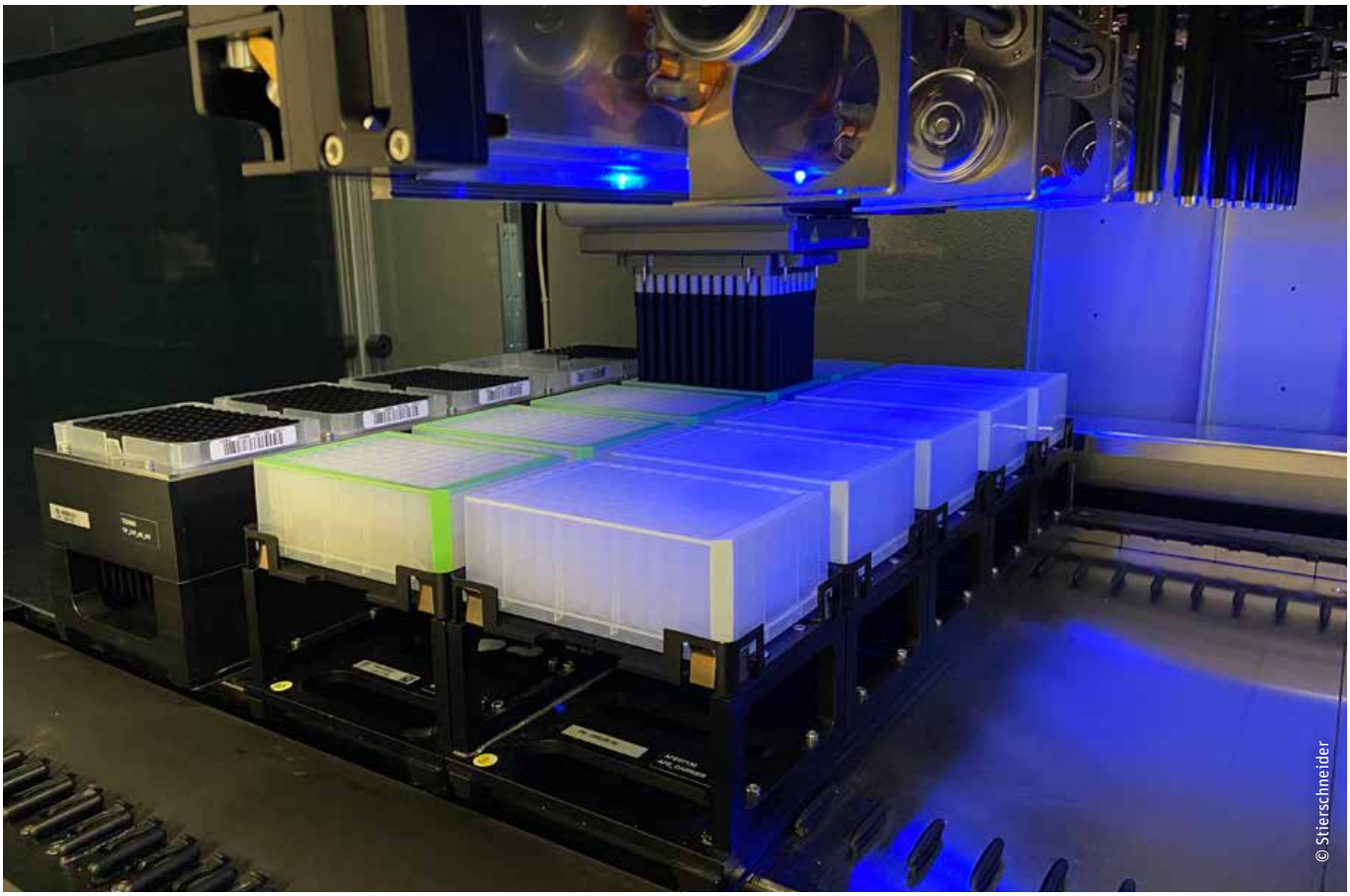
When we introduced genomic selection in August 2011, genotyping was comparatively expensive at €200 per animal. When setting up the genomic training data set, breeders therefore concentrated on the most informative animals, namely proven bulls. The training data set provides information on the relationship between performance and genotype, which can then be used to estimate genomic breeding values for young animals. The performance data for old animals was based on the average performance of daughters (corrected for environmental factors) and of sons (for meat performance traits). These data come from an upstream conventional evaluation, which is why this method is also referred to as the two-step method.

In the single-step method, conventional and genomic estimation are merged into one procedure that jointly considers the relationships of all animals. The relationships for genotyped animals (which currently number 335,000) are calculated based on marker information, while relationships between ungenotyped animals (which number up to 32 million) continue to be derived primarily from ancestry information. Relationships between these two groups of animals are particularly interesting, as they are based on a combination of marker and ancestry information.
This enables the flow of information from genotyped offspring to ungenotyped ancestors, so that ungenotyped animals also benefit from the growing amount of data (for example, this can result in significant increases in the breeding value reliability of ungenotyped dams with several genotyped calves).

However, the decisive factor for the superiority of the single-step method is the fact that the training data set no longer only includes proven bulls, but all genotyped animals with performance values. Table 1 contains a list of the number of genotyped animals whose performance information has already been included in the evaluation using the single-step method. Depending on the trait, data for between 286,000 (vitality index) and 36,000 animals (cystic ovaries) are available. Altogether, the amount of Fleckvieh data that is included is quite impressive. In April, this amounted to more than 13,500,000,000 (13.5 billion) marker genotypes, and the number is growing rapidly. Printed on double-sided paper, this would produce a stack with a height of more than 300 meters.

What are the strengths of the new procedure?

- As the prediction is now based on considerably more information, the new method achieves higher reliabilities for all genotyped animals. Bulls with first daughter performance records from the 2015 and 2016 birth cohorts benefit in particular. For these animals, the genotype information of sometimes hundreds of daughters with records has now been added.



Pipetting robot at ehe AIT in Tulln

Tab. 1: Overview of the number of genotyped animals whose performance values are included in the single step evaluation (as of April 2021)

	Previous two-step method	New single-step method	
	Training data set (proven bulls)	Genotyped bulls with offspring	Genotyp. animals with own performance
Milk/SCC	12,411	20,633	93,687
Conformation (UD)	12,474	13,089	57,156
Long	10,579	21,087	91,927
FEI	11,593	21,718	108,562
VIT	13,222	27,855	285,177
Mas	–	11,122	36,669
EFD	–	17,488	75,987
Cyst	–	11,090	36,212

Milk = Breeding value for milk yield; SCC = Somatic cell count; UD = Udder; Long = Longevity; FEI = Fertility; VIT = Vitality; Mas = Mastitis; EFD = Early fertility disorders; Cyst = Ovarian cysts

This enables more precise genome breeding values, but also a more precise breakdown of the breeding values of hereditary segments ("haplotypes") that these bulls carry. Offspring of these bulls, as well as all other genotyped animals that have the same haplotypes, thus also benefit from the information gained from typed daughters. As a result, the increase in the amount of data is not limited to one bull family but has an impact on almost the entire genotyped Fleckvieh population. Admittedly, in individual cases this makes it difficult to trace the origin of changes in breeding values.

- Up to now, no genomic breeding values were available for direct health traits (early fertility disorders, cystic ovaries and mastitis), given that there were too few proven bulls with sufficient daughter information. By directly considering genotyped cows from farms with valid recording of health data in the training data set, it is now possible to offer single-step breeding values for these traits.

- Single-step is generally the method of choice for the genomic selection of "novel traits" for which performance data are only available from a few cohorts. In August, we were thus able to introduce milking behavior as a new breeding value, and in the coming years, claw health and metabolic traits will also be added.

Shorter estimation cycles thanks to single step

In September 2021, we switched to a two-week estimation cycle, as the new methodology created the technical prerequisites for this conversion. For breeders, this has the advantage that selection decisions can be made even earlier, especially in the case of bull calves.

Breeding values for milking behavior for the first time

In addition to the estimation of breeding values, the genomic breeding value estimation service also includes the performance of breed-specific genetic testing (e.g. Dwarfism) and other Mendelian traits such as polled.
Additional services include the provision of parentage certificates according to the internationally recognized ICAR standard and the performance of duplicate testing for insemination bulls and valuable breeding animals.

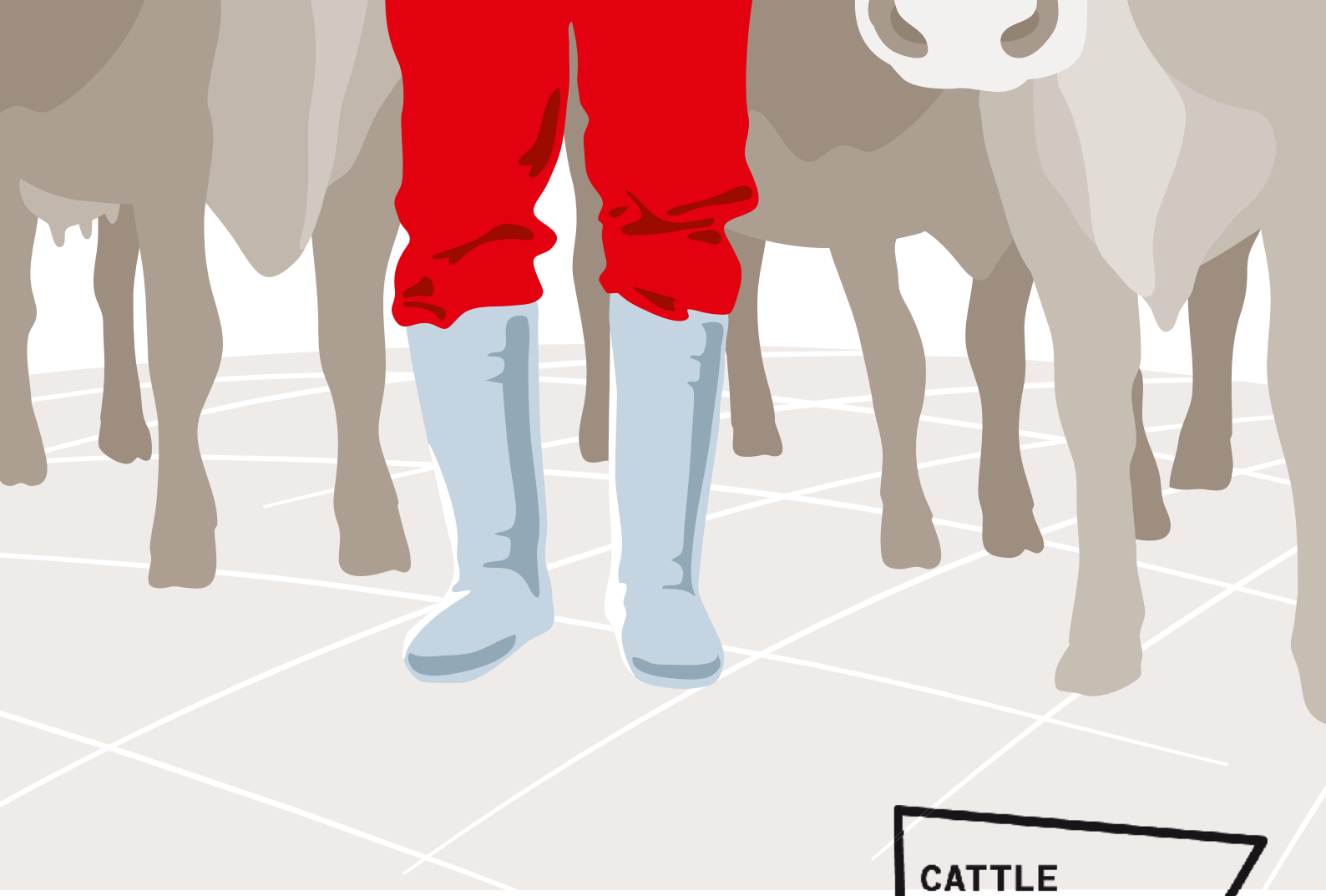
A big step forward in breeding

The introduction of the single-step method marks the preliminary conclusion of a comprehensive process to improve genomic selection. In Austria, this process started with the herd typing project "FoKUHs", while the projects "Braunvieh-Vision", "FLEQS" and "Fleckficcient" conducted in Bavaria and Baden-Württemberg also bear mention. Thanks to public financial support and the initiative of breeders, huge numbers of females have been genotyped in recent years. At present, approximately one in 9 calves or first-calf heifers in herdbook Fleckvieh breeding is genotyped in Austria.

Automated sample processing via robots at AIT in Tulln

The single-step method enables us to reap the harvest of these efforts. Our goal is to make genomic selection the standard breeding tool on farms, in order to empower them to breed even more productive but also robust cows than before.

We would like to thank the Austrian Federal Ministry of Agriculture, Regional Development and Tourism for supporting the "FoKUH"s project, which also co-financed the implementation of the single-step method in Austria.



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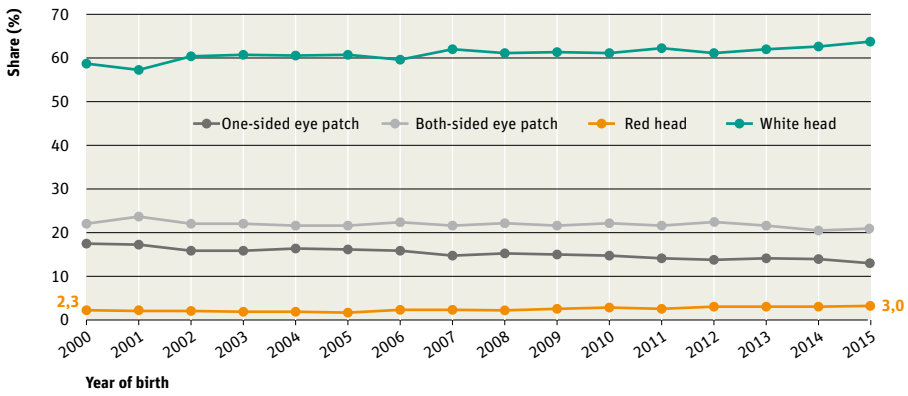
RED HEADS – SO WHAT?
Does a red head offer any benefits?

DR. CHRISTIAN FÜRST, ZUCHTDATA – VIENNA, AUSTRIA

Standard descriptions of the Fleckvieh breed consider a white head to be one of its inherent characteristics. In practice, however, this is not entirely true – many Fleckvieh cattle have eye patches or even a red head with a more or less pronounced blaze. A red head is often interpreted as an indication of crossbreeding with Red Holstein, resulting in the assumption that the carcass yield of these animals is also lower. But is this assumption supported by the facts?

For several years, head colour has also been recorded as part of the linear conformation score of first-calf heifers. This scoring includes the characteristics "white head", "single-sided eye patch", "both-sided eye patch" and "red head" (www.fleckscore.com). The transnational (DE+AT+CZ) conformation breeding value estimation also includes the incidence of the individual colour characteristics of the scored daughters of each bull, which are then published in the ZAR/ZuchtData breeding value database (www.zar.at/zwdb/).

Fig. 1: Evolution of the proportion of different head colours among the daughters of Fleckvieh bulls according to the bulls' year of birth (Germany+Austria+Czech Republic)



Cow conformation data can be used for various evaluations. Figure 1 shows the evolution of the percentage of different head colours among the progeny groups of Fleckvieh bulls since 2000. Overall, just under two-thirds of the Fleckvieh population have white heads. The share of red-headed cattle in the three countries covered by the breeding value estimation (Germany, Austria and the Czech Republic) has increased slightly to 3.0 percent on average. In Austria, 4.1 percent of all Fleckvieh cows scored were red-headed in 2020, a rate that has remained relatively stable in recent years.

No real differences between cows

Based on the colour characteristics of Austrian first-calf heifers, certain correlations between head colour and conformation traits/carcass yield can be determined. These correlations are shown in Table 1. There are no notable differences between the various colour characteristics in terms

of conformation. Cows with a red head exhibit a slight tendency towards a larger frame and negligibly weaker muscling. Likewise, there are no relevant differences with regard to carcass data. Among red-headed cows, only the percentage of conformation classes E and U is slightly lower, but this is not visible in the average conformation classes and should not be overestimated due to the relatively small number of these cows.

» There are no notable differences between the various colour characteristics in terms of conformation.«

Does a red head offer any benefits?

As stated above, records are only available for the colour of cows. However, it can be assumed that the proportion of red heads among the male offspring of a bull will be approximately the same as among his daughters. Therefore, evaluations of the correlation between the proportion of red heads and the carcass yield of bulls also offer useful insights.

Table 2 shows the correlation between the proportion of progeny with a red head and the breeding values of bulls/the carcass yields of their sons. The average values indicate that there are no relevant differences in the beef values, and that there may even be a slight tendency in favour of bulls that produce more red-headed offspring. This negligible difference in breeding values is also reflected in the underlying carcass data of the young bull category. According to objective data from Austrian slaughterhouses, a higher proportion of red heads does not lead to worse average carcass yields, but even to slightly better ones.

Conclusion: the colour doesn't matter!

As this analysis of the available data on head colour in Fleckvieh shows, red heads also occur in purebreds, with no relevant differences in the fattening and carcass yield criteria. The significant price reductions for Fleckvieh fattening calves with red heads that exist in practice are therefore in no way justified – not to mention that colour shouldn't play a role in breeding anyway!

There are no notable differences between the various colour characteristics in terms of conformation.

Tab. 1: Correlation between head colour and conformation traits/carcass yields of first-calf Fleckvieh heifers

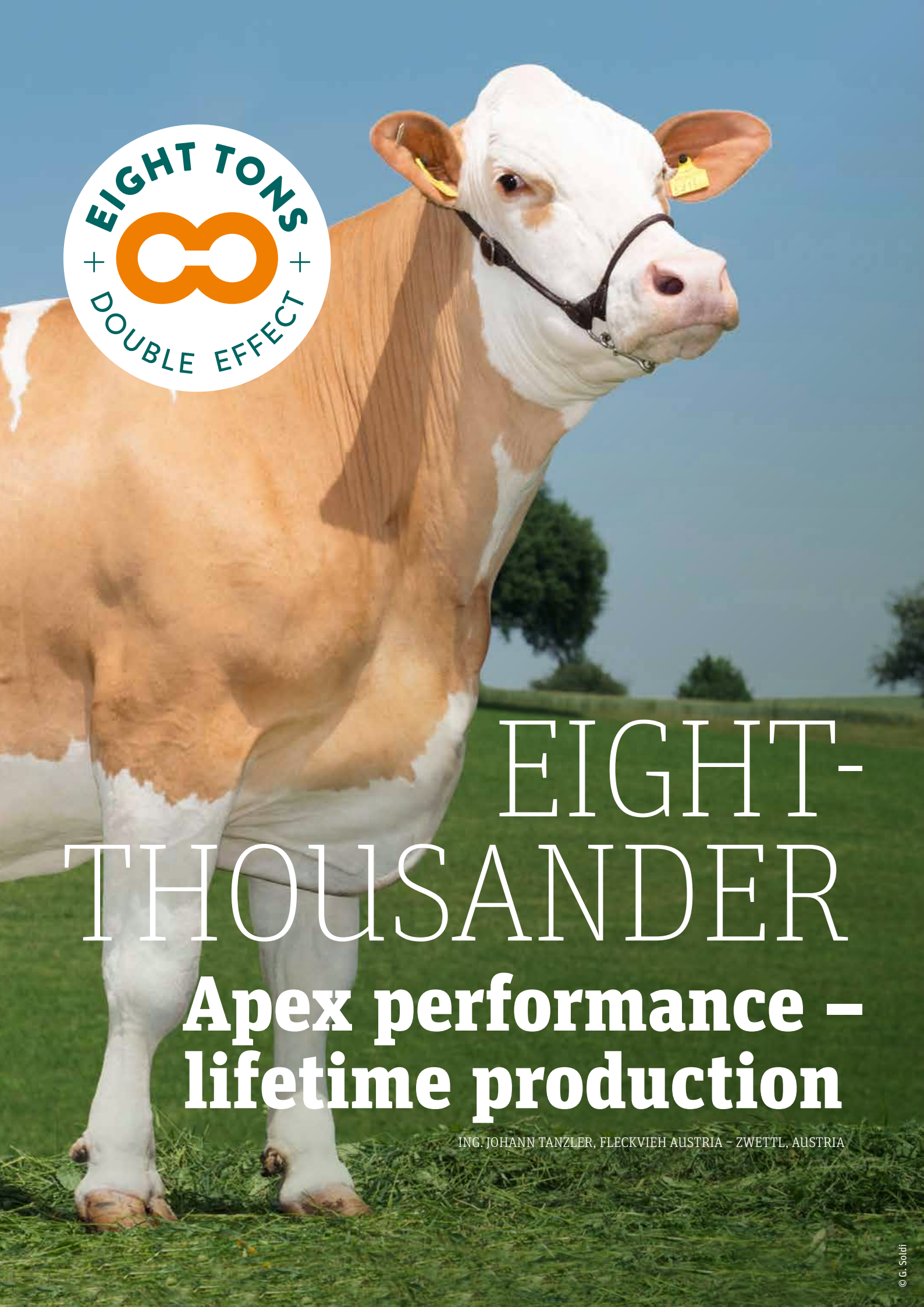
		Head colour			
		White head	One-sided eye patch	Both-sided eye patch	Red head
Conformation [1]	Quantity	92,477	23,691	32,483	5,937
	Frame	80.5	80.4	80.4	80.7
	Muscling	80.0	80.0	80.0	79.6
	Legs & feet	81.1	81.1	81.2	81.0
	Udder	81.4	81.5	81.7	81,8
	Height at cross (cm)	144.2	144.1	144.1	144.5
Carcass data [2]	Quantity	5,171	1,369	1,820	240
	Live weight (kg)	675	683	683	679
	Dead weight (kg)	346	347	348	347
	EUROP	2.85	2.83	2.86	2.83
	E+U (%)	18.7	19.4	19.3	16.7
	CW (%)	51,0	51.1	51.2	51,0

1 Conformation: Scale from 68 to 93; a higher value indicates a larger frame/more muscling/better feet & legs/a better udder.
2 EUROP = EUROP classification (E = 5, ... P = 1), E+U = share of classes E+U, CW = carcass weight (dead/live weight).

Tab. 2: Average breeding values and carcass yields of young bulls based on the proportion of progeny with red heads

		Proportion of offspring with red heads					
		0%	0.1–2.5%	2.6-5%	5.1–7.5%	7.6–10%	>10%
	Quantity	1,085	742	358	188	126	153
Breeding values [1]	BI	100.0	100.3	99.9	100.7	101.4	101.7
	NWG	98.4	99.7	99.4	99.0	100.7	100.8
	CW	100.3	100.1	99.5	101.3	101.5	101.8
	Class.	100.6	100.8	100.7	100.7	100.9	101.1
Carcass data [2]	DWG (g)	1,207	1,213	1,206	1,208	1,219	1,217
	NWG (g)	689	694	691	692	698	700
	EUROP	3.58	3.59	3.59	3.59	3.59	3.59
	E+U (%)	58.9	59.6	59.3	59.9	60.4	60.4
	DW (%)	57.0	57.1	57.0	57.1	57.2	57.2

1 BI=beef index, NWG =net weight gain (dead weight/age), CW = carcass weight (dead/live weight), Class. = EUROP classification
2 DWG = daily weight gain (live weight/age), NWG = net weight gain (dead weight/age),
EUROP = EUROP classification (E = 5, ... P = 1), E+U = share of classes E+U, CW = carcass weight (dead/live weight)



EIGHT-THOUSANDER

Apex performance – lifetime production

ING. JOHANN TANZLER, FLECKVIEH AUSTRIA – ZWETTL, AUSTRIA

In this section we would like to introduce you, dear readers, to some very special cows. These are animals that are very important to breeders, though not only because they accompany their owners for a good part of their lives, creating emotional bonds. If everything goes well, their daughters, grandchildren and great-grandchildren in their own lives will have a significant impact on the genetics of the entire herd in the most positive sense.

Since our goal in Fleckvieh breeding is to think and breed holistically and sustainably, we also want to evaluate these extraordinary services in this way. We have therefore defined the following criteria:

1. A total lifetime production of at least 100,000 kilogrammes of milk.
   This is simply a benchmark that is common in cattle breeding around the world and is synonymous with sustainable performance in Europe.

2. A total lifetime production of at least eight tonnes (8T) of fat and protein.
   These are "Eight-thousanders", so to speak. The amount of fat and protein is our actual selection criterion for milk and therefore also the ranking criterion for lifetime production. In Fleckvieh cattle breeding, we would like to keep the percentage of these solids a little higher, as this means that the proportion of lactose is relatively lower. This increases efficiency since the production of lactose uses energy without adding any value.

3. The special Fleckvieh advantage must be revealed – call it the "Double Effect".
   These cows' naturally elegant muscling not only stabilizes them, but also ensures that purebreds can produce beef of the best quality and quantity in addition to their milk. Every calf, male and female, that is not used for breeding is excellently suited for large cattle farming and is also used that way. It's now also been scientifically proven. While in one-sided dairy breeds a cow's muscle mass is highest at the first lactation and then gradually decreases, the opposite is the case with the naturally higher muscle mass of Fleckvieh cows. Their muscle mass builds up until the sixth or seventh lactation. This explains quite well why Fleckviehs work doubly: even very old animals make excellent carcasses. An "Eight-thousander" lifetime-production cow therefore usually produces more than four tons of good quality beef through its offspring – an unbeatable combination from an economic point of view!

In addition to the economic aspects, this "double effect" has a very big advantage that has only come into focus in recent years but is now becoming increasingly important: This is clearly the most climate-friendly way of producing milk and meat.

Of course, we know that things are not about individual animals at the population level. Average lifetime production is the actual criterion. We are thus pleased with the consistently positive trend in growth over the past few years. In the last annual accounts, Holstein cows were overtaken for the first time in terms of fat and protein. The annual growth in these of approx. 2%, which has persisted for ten years, is based on a slight increase in useful lifetimes and a greater increase in the amount of fat and protein during lactation.

We would like to introduce you to the following 14 cows from the large group of "Eight-thousander" "Double Effect" lifetime-production cows.

© stephanhauser.com

From left to right 2 old ladies from Fam. Freigassner (GS WATTKING's breeder in Weisskirchen / Styria. HANNA (Weinold x Repteit) and HEIDI (GS Montasch x Romel)

HANNA – AT 678.630.217 Weinold x Repteit, Birth: 01.01.10

11/9 11,152-4.23-3.56-870
HL 5. 11,403-4.49-3.77-941 | LP: 109,515 kg / 8.55 t F+P

HEIDI – AT 678.631.317 GS Montasch x Romel, Birth: 23.02.10

10/9 10,813-4.19-3.73-856
HL 4. 11,643-4.21-3.84-937 | LP: 109,415 kg / 8.71 t F+P

HL: Highest lactation; LP: Life permormance; kg: Milk yield in kg; t F+P: Tons of fat + protein

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HERZOGIN – AT 559.012.117 Vanstein x Weinold, Birth: 29.04.09

10/9 11,456-4.08-3.46-864
HL 7. 13,811-3.87-3.41-1,005 | LP: 118,421 kg / 8.95 t F+P

© Baumann

F1050 – AT 684.155.817 Rurex x GS Rohar, Birth: 29.04.09

10/9 11,401-4.42-3.53-906
HL 5. 14,080-4.56-3.45-1,128 | LP: 109,028 kg / 8.79 t F+P

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NEVADA – AT 181.103.616 Manfred x Humid, Birth: 25.01.08

10/9 10,008-4.46-3.45-792
HL 4. 12,952-5.02-3,38-1,088 | LP: 110,475 kg / 8.69 t F+P

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TULPE – AT 008.686.817 Wassermann x Humid, Birth: 23.09.08

12/11 11,135-4.88-3.76-962
HL 10. 15,899-5.24-3.79-1,436 | LP: 125,961 kg / 10.91 t F+P

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NICOLL – AT 534.830.817 Hades x Rumba, Birth: 26.05.09

10/9 11,872-4.05-3.52-900
HL 7. 15,231-4.20-3.24-1,132 | LP: 113,666 kg / 8.63 t F+P

© KeLeKi

IRMI – AT 876.474.309 Weinold x Honer, Birth: 29.09.06

13/12 8,957-4.48-3.42-707
HL 2. 10,092-4.64-3.47-818 | LP: 113,974 kg / 9.12 t F+P

HL: Highest lactation; LP: Life permormance; kg: Milk yield in kg; t F+P: Tons of fat + protein

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CARMEN – AT 911.590.809 Vanstein x Milan, Birth: 26.11.06

13/12 8,815-4.15-3.35-661
HL 8. 9,908-4.46-3.45-784 | LP: 117,349 kg / 8.80 t F+P

© Mitterböck

JUDITH – AT 900.721.914 Ress x GS Wald, Birth: 19.11.07

10/10 10,333-3.69-3.38-730
HL 10. 11,990- 4.18-3.44-913 | LP: 117,579 kg / 8.37 t F+P

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FEIGERL – AT 936.318.916 Vanstein x Humlob, Birth: 23.02.09

8/7 11,996-4.00-3.47-896
HL 4. 13,667-4.15-3.56-1,053 | LP: 107,378 kg / 8.38 t F+P

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SELINA – AT 616.583.518 Ilion x Waterberg, Birth: 24.10.10

10/8 13,435-3.95-3.46-997
HL 6. 15,062-4.00-3.46-1,123 | LP: 118,276 kg / 8.78 t F+P

© Thomas Wagner

ESTELLE – AT 028.593.716 GS Rau x GS Weinbar, Birth: 08.04.08

10/9 10,520-4.52-3.38-831
HL 8. 12,261-4.56-3.30-965 | LP: 111,544 kg / 8.82 t F+P

© Grabner

BERGSEITE – AT 597.783.517 Melenaos x Safir, Birth: 25.11.09

9/9 11,233-4.06-3.49-848
HL 8. 13,485-4.22-3.40-1,026 | LP: 109,637 kg / 8.28 t F+P

HL: Highest lactation; LP: Life permormance; kg: Milk yield in kg; t F+P: Tons of fat + protein

ERLE with her breeders, the Schirnhofer family from Grafendorf

© Schirnhofer

FIRST 200,000 KG FLECKVIEH COW
Erle sets a new world record

ING. REINHARD PFLEGER, FLECKVIEH AUSTRIA – VIENNA, AUSTRIA

ERLE goes down in the history books of cattle breeding. This exceptional heifer is the first Fleckvieh cow in the world to produce more than 200,000 kg of milk over her lifetime. This historic achievement was made possible by a combination of exceptional genes and the best possible animal care provided by Bernhard and Maria Schirnhofer from Grafendorf in Styria.

© KeLeKi

ERLE: 12/12 13.530 - 3,74 - 3,20 - 940; HL 4. 17.064 - 5,06 - 3,11 - 1.394; LL 200.543 kg; shown during the fifth lactation

ERLE'S Performance

ERLE was born on 15 January 2004. She is thus almost 17 years old and has given birth to 12 calves. Her incredible milk yield of currently 200,543 kg, with a total fat and protein content of over 14,0000 kg, was achieved over 4,737 milking days. This corresponds to a milk yield of 42 kg for each milking day. For comparison, the average lifetime yield of Fleckvieh cows in Austria is around 30,000 kg. Erle's lifetime performance alone would be enough to supply the inhabitants of her hometown of Grafendorf with milk for almost a year.

ERLE'S Genetics

ERLE is a daughter of MORROR, a sire from Württemberg who is known for the transmission of type traits, while on her mother's side she descends from the well-known Styrian cow ELLI. In the first years of the new millennium, ELLI set new standards in Fleckvieh performance, and with her outstanding yield of more than 20,000 kg milk with a fat and protein content of 1,604 kg, she is still the best-performing Fleckvieh cow that Austria has ever produced. She achieved a lifetime yield of 118,000 kg milk

with only seven calvings. As granddam of GS MINNESOTA, ERLE is also represented in the pedigree of a positively tested sire of GENOSTAR. Within her herd, ERLE stands out for her toughness, her strong will as well as her outstanding persistence and udder health stability. These are qualities that GS MINNESOTA, who is one of the most productive sons of MANITOBA, probably inherited from his grandmother.

ERLE'S Home Farm

ERLE's home is the farm of Bernhard and Maria Schirnhofer in Grafendorf, which comprises more than 50 ha of farmland and forests. Their herd consists of 75 cows, with are currently producing more than 10,600 kg of milk. In recent years, they have made major investments in cow welfare, implementing them themselves across several construction phases. In addition to remarkably stable genetics in terms of longevity, the Schirnhofer family's consistent animal care and herd management efforts have translated into an exceptionally high number of old cows. Only recently, they were able to celebrate the tenth cow with a lifetime yield of more than 100,000 kg of milk. This makes the Schirnhofer family only the second Fleckvieh breeding farm in Styria to be awarded the coveted ZAR Lifetime Achievement Award.

Speaking of family: Bernhard and Maria have passed on their love of farming and cattle breeding to their children, all four of whom are active young breeders. Given the size of the farm, it is only thanks to the support of his family that Bernhard is able to devote time to his roles as Deputy Chairman of the Styrian Cattle Breeding Association and Chairman of the Greinbachhalle Auction Centre, and to promote the further development of these organisation in line with his sense of community.

» FLECKVIEH AUSTRIA congratulate the Schirnhofer family on ERLE, the Fleckvieh cow with the world's highest ever lifetime performance, and on the success of their business. We are very proud to have farms like these among its members that achieve exceptional results through diligence, professional expertise and personal qualities.«

ERLE with breeder family Schirnhofer and congratulators from Styrian Agriculture Chamber, Breeders Association and LKV Steiermark

(From left to right) Cow SEMENTA (GS ROLAND x POLDI) 101,558 kg LP, ERLE (MORROR) 212,771 kg LP and RIO (RORB x WATERBERG) 113,900 kg Life performance

Fleckvieh Changes: Robust – Efficient – Sustainable!
The three cows on the picture have a life performance of 428,229 kg of milk

Sustainable Agriculture – the Austrian Way

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Sebastian Auernig, AAC-Chairman

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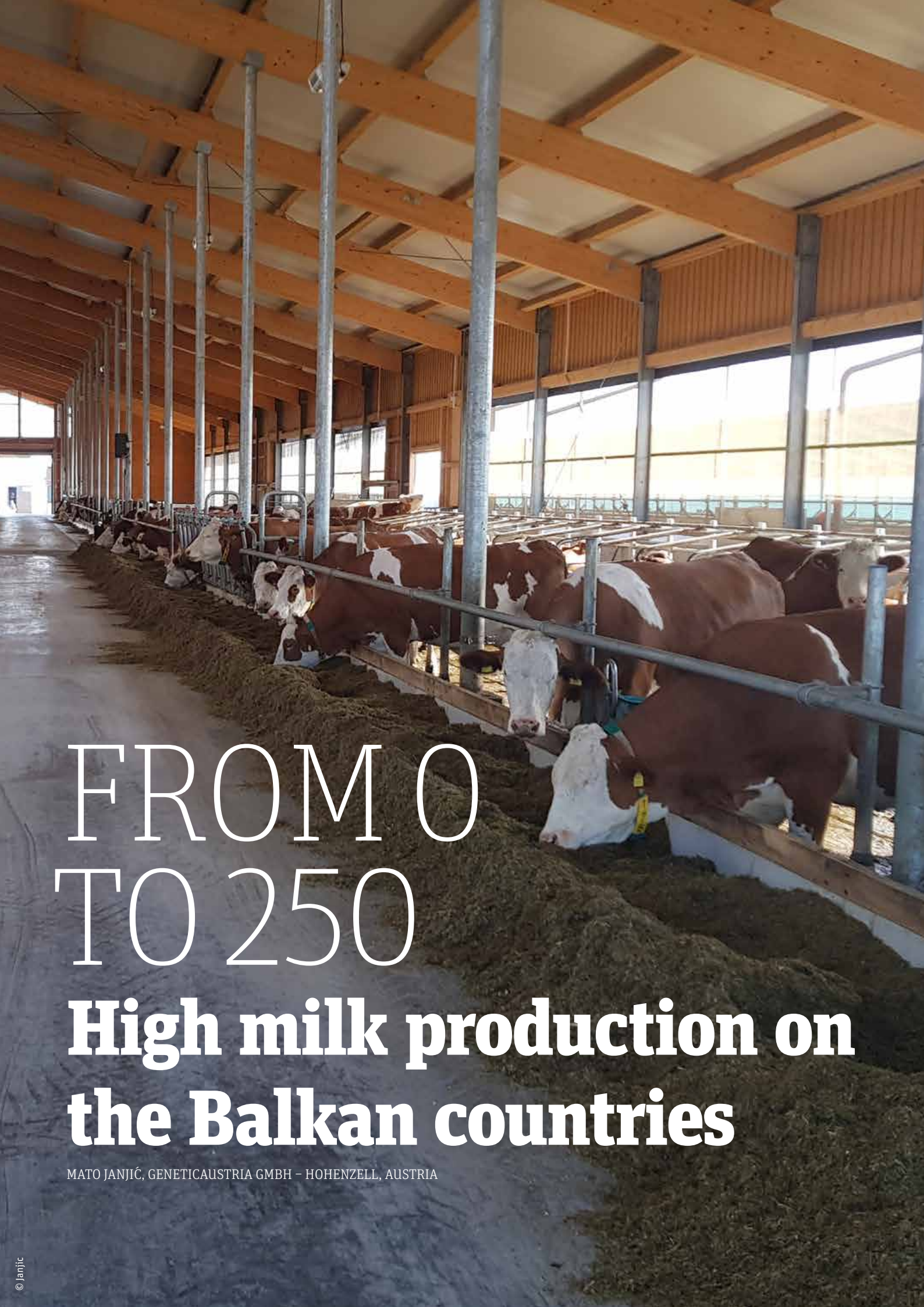

FROM 0 TO 250

High milk production on the Balkan countries

MATO JANJIĆ, GENETICAUSTRIA GMBH – HOHENZELL, AUSTRIA


© Janjic

The Agro Mašić farm is located about 180 km north of Sarajevo in Gornja Tramošnica, Federation of Bosnia and Herzegovina. Originally from Gornja Tramošnica, the entrepreneur Niko Mašić is living in Austria since 1988 but has always remained true to his roots in Bosnia-Herzegovina and in 2014, he set up a modern dairy farm in his former homeland.

His experience of working in the meat industry for 25 years enabled Niko Mašić to found his own company, MMF – Masic, Meat & Food, in 2000, based in Eugendorf in the state of Salzburg.

The beginnings of a success story

In 2012, Niko decided to launch a company, called Fruits & More, in Bosnia and Herzegovina, specializing in the export of fruit and vegetables, which he then renamed to Agro-Mašić in 2016. Given his keen interest in agriculture, especially in dairy production, and his ambition to create something in his former homeland, Niko decided to build a modern stall barn in 2014. In doing so, he placed particular emphasis on cow comfort (deep stalls, wide walkways).

Several well-known Austrian construction and stabling companies were involved in the project. After completion of the new barn, the first 88 pregnant Fleckvieh heifers were imported from Austria. In the second half of 2016, the facility's capacity was expanded to 300 places by adding bed stalls, lengthening the barn and extending the silo pits.

Afterwards, 126 top-quality Austrian heifers were again imported via genetic-AUSTRIA. In the summer of 2017, an additional stable with sloped floor system for young cattle was built in the form of a manure barn with automatic bedding that can accommodate 400 fattening bulls and rearing calves.

The farm today

Today, the farm manages an area of over 500 ha, of which 70 ha are grassland that can be mowed four times a year. The arable land is divided as follows: 200 ha of corn for silage and grain corn production, 50 ha of barley, 100 ha of wheat and 40 ha of rapeseed.

» There are currently 250 Fleckvieh cows on the farm, of which 238 are milking over 6,600 kg of milk per day. «

Agro Mašić now ranks among the largest suppliers of milk to the local dairy company Inmer, which belongs to the French Lactalis group. The cows are milked daily by two milkers in a double-eight herringbone milking parlor that is equipped with milk metering. In addition, all offspring is housed inside the stable.

Excellent management

The main responsibility for herd management belong to the family Lukanović. Together with 19 other employees, they manage the farm and are responsible for its external commercial activities.


© Janjic

Calf barn

The dairy company carries out 23 milk quality recordings. The average fat content amounts to 4.03 percent and the protein content to 3.46 percent. With regard to the former, it is difficult to maintain high fat levels, especially in the very hot summer months (with temperatures sometimes exceeding 40°C), when the feed intake of the herd decreases dramatically. The average milk yield ranges from 28 to 32 kg, with individual yields exceeding 60 kg, which is remarkable even by Austrian standards.

Insemination bulls

The cows are almost exclusively inseminated with Austrian bulls such as VOLLENDET, SPARTACUS, HADRIAN, MANDRIN and EVER-

GREEN. By the summer of 2022, calvings of 50 daughters of the top bull VOLLENDET are expected. And in particularly intractable cases, the farm's own bull has to do the job.

Feeding and rearing of calves

Since 2016, the animals have been fed full TMR consisting of two performance groups. Grass silage and corn silage each constitute half of the main component of the ration. In addition, the animals are fed a special mixture consisting of barley, wheat, corn, soybean and rapeseed meal, molasses and mineral feed. In the case of dry cows and older heifers, triticale whole plant silage and straw are also added to the ration.

» In the future, the farm will thus be able to market over 4.5 million kg of milk, as well as 250 fattening bulls and about 100 heifers for breeding in the region. «

Special emphasis is placed on calf management. Immediately after birth, care is taken to ensure a sufficient supply of high-quality colostrum. For this purpose, the quality of the colostrum is measured and high-quality colostrum is also frozen in order to have some in stock if necessary. After the whole-milk phase, the farm switches to milk replacer as well as offering the calves dry TMR for consumption until they are five months old.

Future objectives

The goal of owner Niko Mašić is a self-contained farm housing 500 dairy cows and all their offspring. In the future, the farm will thus be able to market over 4.5 million kg of milk, as well as 250 fattening bulls and about 100 heifers for breeding in the region. We wish Niko Mašić all the best and good luck for the future in the land of unlimited possibilities!

© Janjic

The sloped floor barn offers spaces for 400 young cattle

© Janjic

Feeding alley in the dairy cowshed

© Janjic

Outdoor bed stalls

Breeder of the year 2020: The Sitka family with six bulls from their farm.

© stephanhauser.com

DILIGENCE + CONSISTENCY = SUCCESS

Breeder of the year – Sitka family, Miesenbach, Styria

ING. REINHARD PFLEGER, FLECKVIEH AUSTRIA – VIENNA, AUSTRIA

This report takes a look at the Sitka farm in Miesenbach, Eastern Styria, which can rightly claim to be one of the most successful Fleckvieh breeders of the last decade in Austria. In the last eight years, the Sitka family has finished in the top 10 of the "Fleckvieh Breeder of the Year" ranking six times, five times even earning a spot on the podium. This year a big dream came true for the family.

The "Fleckvieh Breeder of the Year" competition evaluates the breeding work of the participating farms. The main idea is not only to identify the best farms in terms of absolute milk yields, but also to evaluate their breeding work. In 2003, FLECKVIEH AUSTRIA decided to entrust ZuchtData with the task of drawing up an evaluation key and putting the idea into practice.

All farms with Fleckvieh as their main breed automatically take part in the competition

© private

SG – Sitka genetics

if they have at least one young or progeny-tested bull or one genotyped bull calf during the observation period. The observation period runs from 1 October to 30 September of the following year, with 30 September as the cut-off date.

The evaluation takes the following factors into account: The number of re-used progeny-tested bulls and their use in targeted mating, the number of young first-time bulls and their use in targeted mating, the number of genotyped bull calves (total merit index ≥ 128 and feet & legs + udder ≥ 205), the average total merit index of the cows, the share of young bulls among all inseminations, the number of cows with high lifetime yields, the calving intervals, the cell count and the participation in health monitoring and data delivery activities.

Sitka Genetik is the 2020 breeder of the year

This year, Engelbert Sitka won Austria's "Oscar of Fleckvieh breeding". And he did so with flying colours, achieving the highest score ever recorded, with a lead of more than 200 points over the runner-up. He laid the foundation for this success by selling a total of six genomic young sires to insemination stations, two of which, GS RAZFAZ and GS HUBERBUA, currently rank in the top league of Fleckvieh breeding. During the evaluation period, his farm boasted an incredible 13 candidates with a maximum total merit index of 142 points, which promise to be highly sought-after young sires in the future.

Operating Philosophy

The 24 cubicles in the Sitka farm's tie-stall barn produce milk at average yields of

© G. Soldi

GS WERTVOLL progeny group

© G. Soldi

REWANA, a full sister of GS WERTVOLL and dam of GS EHRSAM and GS ER WILL, among others

© stephanhauser.com

NANDA (IMPERATIV x HURLY); TMI 127, MI 123; 2/1: 9,652-4.39-3.46-758

© Anna Joosse

INROS-daughter TINA – winner of several shows, shown here during the second lactation, 4/4 11,513-4.51-3.45-916

© Luca Noli

Nora was purchased at the National Fleckvieh Exhibition 2017 by a Bavarian breeding farm at the Elite auction

Tab. 3: Selection of insemination bulls that came directly from the Sitka farm (Breeding values as of 12/21)

Name	Sire/dam's sire	Owner	Progeny test	TMI	MI	M-kg	UD
GS RAZFAZ	ROLLS/ETOSCHA	GS	N	140	122	909	113
GS MY BEST Pp*	GS MYSTERIUM Pp*/GS DER BESTE	GS	N	137	123	1,177	114
GS HUBERBUA	HERMELIN/ETOSCHA	GS	N	131	123	1,092	117
GS ZARAS	ZAZU/ETOSCHA	GS, CRV	N	129	115	590	118
GS HOFSTATT	HERMELIN/ETOSCHA	GS	N	132	113	1,090	116
GS WAY	WORLDCUP/GS WALCH	GS	N	127	110	991	117
WERT	GS W1/ETOSCHA	RG	N	127	114	666	120
GS EHRSAM	ETOSCHA/WILLIAMS	GS, CRV	N	125	104	172	120
WEMBLEY	GS W1/ETOSCHA	BSG	N	123	113	665	112
GS HILFERUF	HERMELIN/ETOSCHA	GS	N	133	119	836	119
GS MURTAL Pp*	GS MAECHTIG Pp*/HURLY	GS	N	123	119	960	100
GS ER WILL	ETOSCHA/WILLIAMS	GS	N	114	105	324	113
ELSTAR	ETOSCHA/WILLIAMS	BSG	N	125	115	785	118
ELRANCHO	ETOSCHA/WILLIAMS	BG	N	119	108	21	122
GS WERTVOLL	WILLIAMS/RAFFZAHN	GS, CRV	Y	110	119	830	129
GS VAIL	VEUERWERK/INDOSSAR	GS	Y	122	117	868	113

Table 4: Selection of insemination bulls from Sitka farm cows

Name	Sire/dam's sire	Owner	Progeny test	TMI	MI	M-kg	U
WEIDWERK	WEITBLICK/HURLY	HÖ	N	136	117	993	123
MANAGER	METTMACH Pp*/HURLY	BGW	N	127	120	1,006	103
WELSER	GS W1/HURLY	BSG	N	127	116	1,033	121
WISCONSIN	WISCONA/EVEREST	BSG	N	128	112	230	110
WALTDISNEY	WALOT/HURLY	EG	N	120	113	736	121
WEINBRAND	WALDSTERN/HURLY	EG	N	115	118	1,039	115
VERYNICE P*S	VERSACE PP*/GS WOHLTAT	EG	N	118	115	489	103

around 10,000 kg. The family has continuously improved its tie-stall barn in recent years in order to improve cow comfort. Currently, the animals are housed in cubicles with straw beds and neck brackets and are fed by a mobile feeding robot. Engelbert Sitka opted in favour of the tie-stall system, given its advantages for the rearing of young cows, which is an important part of his business. Every year, he sells more than 30(!) young cows to satisfied buyers at auctions organised by the Cattle Breeding Association in Styria (RSTM) and the online provider Kuh4You. All cows are thus accustomed to both the free-stall and the tie-stall systems, are suitable for grazing and can be led by a halter. The intensive use of embryo transfer produces many females, all of which are genotyped and reared. To this end, Sitka outsources his young cattle to two partner farms. For calving, they return to the farm, and the genetically most promising young cows are then used to rebreed the herd. All promising male candidates are reared at the ELP in Kalsdorf via a contract offered by GENOSTAR.

Breeding Philosophy

Engelbert Sitka stands out for his diligence, consistency in breeding, composure in the face of setbacks, openness to the latest breeding methods and his sensitivity in handling the animals. Since genomics was introduced in 2011, a total of 325 male and female animals have been genotyped. It goes without saying that the Sitka farm participates in the FoKUHs herd typing project. In December 2020, the farm carried out its 100th embryo transfer. For years, the farm has planned all matings based on the GS AIO mating programme, and all animals are inseminated using genomic young sires. At present, the cows in Engelbert Sitka's herd have an average total merit index of 120.2 points. Thanks to this impressive score, Sitka's cows are by far the most genetically advanced Fleckvieh herd in Austria. There are currently 67 females at the home farm, 68 per cent of which have a total merit index of 120 and more. And Engelbert Sitka also owns a mixed-hornless daughter of HERAKLES Pp with a total merit index of 142 – probably one of the most valuable animals in the entire Fleckvieh breed. Tables 1 and 2 present a selection of the farm's genetically most promising male candidates and female calves.

The Breeding AIM

Asked about his idea of the ideal Fleckvieh cow, Engelbert Sitka gave the following description: "Elegant, narrow, productive, geared towards turnover, with a small-volume udder of high quality." With the support of GS AIO, he has been selecting insemination bulls based on these criteria for many years. Successful marketing parameters such as milk yield and conformation round out his vision of the ideal cow and bull heredity. In short, it's all about high-quality genetics, as evidenced in the total merit index and the milk index. From the genetically superior bulls in the population, he selects those with the best udder and feet and leg values. Table 3 shows a selection of the bulls bred by the Sitka farm in recent years. Their breeding values reflect Engelbert Sitka's breeding strategy. Among the younger generation, daughters of GS DER BESTE, GS WERTVOLL and ETOSCHA rank among the top cows on the farm. The insemination plan is currently based on the home-bred bulls GS RAZFAZ, GS HUBERBUA,

Breeder of the year with 779 points! A new record in the 18 year history of the competition.

GS HOFSTATT and GS ZARAS, soon to be followed by GS MY BEST Pp. Over the past years, Engelbert Sitka's approach to today's hot topic of breeding for genetic polledness has been rather cautious. Therefore, he has only used a few polled sires, and only if they came from proven bloodlines, which has resulted in an especially efficient breeding output. Two promising bulls carrying the polled gene, GS MY BEST Pp and GS MURTAL Pp, both of which are currently in high demand, have thus left the Sitka farm for the GENOSTAR insemination station.

Genetics that help breeders to succeed

Thanks to the Sitka farm's outstanding genetics, the animals it sells also make many a breeder happy outside the walls of its stable in Miesenbach. As a result of its effective marketing activities, animals from the Sitka farm can be found in almost all regions of Austria, as well as in Germany, Slovenia, the Czech Republic, Northern Ireland and, through the sale of embryos, also in Colombia and Brazil.

One animal that has had a rather special career is the HURLY-daughter NORA; she was offered for sale at the Austrian Fleckvieh Show in Maishofen in 2017, where she was acquired by the up-and-coming Bavarian breeder Schröppel. Six of NORA's bulls have already been purchased by various breeding stations, including WEIDWERK, one of today's most promising young Fleckvieh sires with a total merit index of 138. Another animal from the strong N bloodline of the Sitka farm is WISCONSIN. His dam Natascha (sire: Everest) was purchased at auction in Traboch from the successful Bavarian breeder Johannes. In addition to their strong genetic disposition, both cows have achieved lactation yields of over 11,000 kg of milk in their new home barns.

Dominant cow bloodlines

Two bloodlines dominate the genetic pool of the Sitka farm: While they have different genetic characteristics, they both boast the same dominant heredity patterns, which explains their success. Well-known cows from the R bloodline are the MANITOBA-daughter ROSENSTOLZ (son GS INROS), her RAFFZAHN-daughter REXANA (son GS WERTVOLL) as well as her WILLIAMS-daughter REWANA (son GS EHRSAM) and her ETOSCHA-daughters REMARY (son GS RAZFAZ) and RELEXY (son GS ZARAS). The cows from the R bloodline boast a large frame, strong conformation, high productivity and excellent udder characteristics – qualities that are evident in the offspring of the exceptional conformation sires GS WERTVOLL and GS INROS.

The N bloodline yields medium-framed, narrow, elegant cows with excellent, productive udders. Well-known cows from this family are the ROMEL-daughter NERA (son GS VENEZUELA), her MANITOBA-daughter NIKI (son GS ILKON), her INDOSSAR-daughter NALISA (son GS VAIL) and the latter's HURLY-daughter BM NORA (sons WEIDWERK and GS MURTAL Pp) and ETOSCHA-daughter NANIA (sons GS HUBERBUA and GS HOFSTATT).

Words of thanks

The Sitkas have passed on their ardour and passion for cattle breeding to their two children, Kerstin and Andreas. Both are active young breeders and often accompany father Engelbert to auctions and shows.

Earning the title of Austria's Breeder of the Year was one of Engelbert Sitka's big breeding goals. In his hour of triumph, it is important for him to say thank you – by thanking those without whom this success would not have been possible: "I would like to thank the RSTM breeding association and its Managing Director Reinhard Pfleger, the GENOSTAR insemination station and its Managing Director Peter Stückler, and my longtime advisor Thomas Kahr for their support and collaboration. In addition, I would also like to thank Dr Hans Wilhelm's ET team and my two breeding partner farms. Last but not least, I would like to thank my family for the work we do together on a daily basis.

FLECKVIEH AUSTRIA, Rinderzucht Steiermark and GENOSTAR congratulate the Sitka family on their success, which has been recognised by the title of Austria's "Breeder of the Year". We are both proud and grateful to have such an enthusiastic, consistent and remarkably loyal farm in our ranks.

OPERATIONAL DATA

Family Engelbert with his partner Regina and their children Kerstin and Andreas, as well as his parents Engelbert Sr. and Johanna.

Location Miesenbach near Birkfeld, Styria

Altitude 860 metres above sea level

Holdings 48 hectares of owned and 8 hectares of leased land, of which 30 hectares are forest, 4 hectares cereals, 6 hectares clover grass and alfalfa, and the rest are permanent pasture

Livestock 24 dairy cows, 50 young females, 50 young female animals are outsourced to two partner farms

Barn type Cows: combination system with outdoor exercise and feeding robot
Young cattle: slatted floor with raised stalls

Feeding Cows: full TMR including hay, grass silage and concentrates
Young cattle: TMR including hay and grass silage, grazing in summer
Calves: straw TMR and automatic feeder

Performance data

Year	Cows	Milk (kg)	Fat (%)	Protein (%)	F+P (kg)
2017	23.2	10,513	3.98	3.51	787
2018	22.9	10,568	4.13	3.58	814
2019	22.5	9,971	3.88	3.45	731
2020	23.2	10,422	4.30	3.58	821
2021	24.2	9,993	4.28	3.62	790

Show successes 2017 Dairy Grand Prix – Grand Champion FV with TINA (sire: GS INROS)
2017 BFVS – group winner in the "young cows" category with TINA (sire: GS INROS)
2018 Dairy Grand Prix – group winner with TINA
2019 GENOSTAR breeding programme show – group victory with TINA

Marketing Bull calves and dairy cows via the Greinbach livestock market for cattle. Young cows via auctions in Traboch, Greinbach and on the Kuh4You platform.

WWW.GENETIC-AUSTRIA.AT

SEMEN
EMBRYOS
LIVESTOCK

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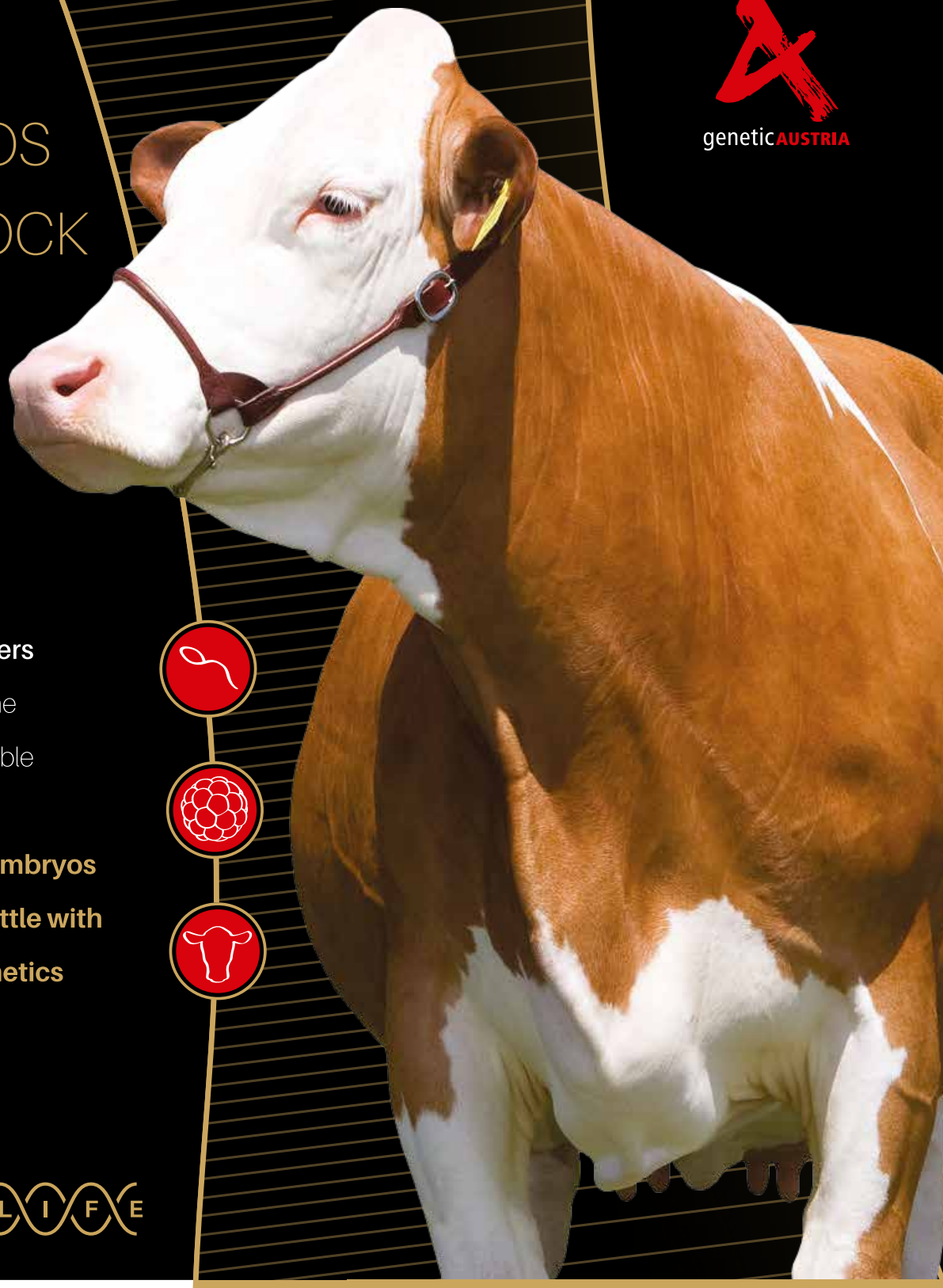

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The quietest time of the year brings precious gifts

Comments on the December 2021 breeding value estimation

ING. REINHARD PFLEGER, FLECKVIEH AUSTRIA – VIENNA, AUSTRIA

The December breeding value estimation (BVE) is placing valuable presents under the Christmas trees of Fleckvieh breeders. These gifts consist of a high-quality range of internationally competitive bulls that enable breeders to achieve their individual breeding goals.

The strength of Fleckvieh Austria's breeding programme, combined with its consistent implementation by our member associations and insemination stations, is producing a remarkable output of sires with top scores at all selection stages. However, the foundation of any breeding success is the active cooperation of the thousands of Austrian breeders and their families. Motivation and enthusiasm for Fleckvieh breeding are fundamental values in this regard. Particularly important is the trust of the Austrian Fleckvieh breeders in a breeding philosophy based on economic and scientific principles, without which progress would not be possible. The top bulls on the list conform to our vision of what Fleckvieh should be, both today and tomorrow.

Progeny-tested bulls

With **GS ZERO ONE**, we have a new number 1 on the list of daughter-tested bulls who stands out for his excellent milk components, udder health and beef performance values. He is followed by **GS ENJO**, a combination sire with top scores in fertility and udder health. **VOLLENDET** is also on the podium again. He is able to meet the demand of many breeders for performance coupled with superior udder health and fertility and strong inheritance of conformation. A new addition to the group of outstanding progeny-tested bulls is **WOMBAT**. He produces animals with a strong frame and promises excellent udder health. **GS VERY GOOD** exhibits outstanding durability of breeding values with a suitable combination of top performance, strong udders and easy calving. At the top of the list is **GS DER BESTE**, an absolutely exceptional sire of cows. With an udder breeding value of 135 points he tops the ranking of the population in this trait. Newly added to the list is **GS EWIG**, who promises excellent dual-purpose traits and calves of outstanding quality.

Genomic young sires

The selection of young sires meets the needs of every breeder and, thanks to the conversion of the BVE to the single-step method, provides breeding value predictions of significantly greater certainty. **GS WINTEN** was able to further improve his breeding value by offering impeccable fitness traits. **GS WUNDAWUZI** also earned a place on the podium. Endowed with a typical Austrian name, he delivers performance in combination with premium udder quality. Several interesting young animals also made it into the Top 10. **GS DUPLO** stands out for his cutting-edge bloodlines and ideal fitness characteristics. **WINTERTRAUM** scores with his package of excellent conformation and fitness at the highest level. **GS WESTCOAST** excels thanks to his sought-after combination of strong inheritance of milk and beef traits. **MOAB** boasts strong performance with above-average inheritance of udder characteristics. The crossbred polled bull **HAMLET Pp** delivers strong performance and impeccable conformation. **HORAZIO P*S** offers natural hornlessness paired with strong frame inheritance. **SUPERBOY** stands out for alternative frames and an impressive linear profile.

Single Traits Main Focus – December 2021

The schedule contains the best 10 bulls, assessed on the basis of individual traits, from a joint list of proven bulls (in brown) and genomic bulls (in blue). The lists are arranged in accordance with relative breeding values as associated with individual traits, total merit index and milk index. The two best proven bulls have been listed in any event, even if they have not been counted among the top ten.

Rank	Name	Diff.TMI
14	HARUN	+4
1	GS ZERO ONE	+3
2	GS ENJO	+3
71	GS HAYDN	+2
116	GS ENJOY	+2
117	GS MEDWED P*S	+2
29	GS HELLSEHER	+2
34	GS WORKER	+2
36	GS HOLBACH	+2
2	GS WINTEN	+1

Rank	Name	MI
107	HERZKLOPFEN	137
42	VOCO	137
6	GS DELUXE	135
34	GS WUKSI	135
76	ILDEFONSO Pp*	135
13	HERWIG	135
7	HABANERO	134
35	IMMUNITY Pp*	134
108	HANUTA	133
133	SENNA	133

Rank	Name	BI
45	INGMAR PP*	123
158	HOLOWITZ	123
21	ETOSCHA	123
27	VELTLINER	123
114	GS DOC	122
143	GS HUBERBUA	122
131	HOFRAT	121
25	GS WIZZARD	121
110	ZIROS	120
28	WEYER	120

Rank	Name	FIT
18	MOAB	136
5	WINTERTRAUM	135
13	GS WOWARD	131
72	GS WHIRLPOOL	130
129	GS WOIWODE	130
3	GS WUNDAWUZI	129
75	ERICH	129
4	GS DUPLO	128
3	VOLLENDET	126
36	GS HOLBACH	123

Rank	Name	CCI
45	INGMAR PP*	128
131	HOFRAT	128
8	GS WESTCOAST	127
114	GS DOC	126
143	GS HUBERBUA	126
17	GS RAZFAZ	125
104	WILDMOSER	125
124	WALL	125
21	ETOSCHA	124
25	GS WIZZARD	120

Rank	Name	Mkg
107	HERZKLOPFEN	+1852
133	SENNA	+1663
52	MENOP	+1568
34	GS WUKSI	+1515
7	HABANERO	+1452
14	HARUN	+1446
77	HERZBOMBE	+1444
42	GS MYDREAM	+1442
23	MEDIAN	+1414
13	HERWIG	+1330

Rank	Name	F%
8	VLATURO	+0,42
45	INGMAR PP*	+0,38
15	GS RENEGADE	+0,38
1	SUNSHINE	+0,35
15	HABIB	+0,35
27	VELTLINER	+0,31
53	ZACHARIUS	+0,29
35	IMMUNITY Pp*	+0,27
20	GS HOERI	+0,25
26	GS RAPIDO	+0,23

Rank	Name	Fkg
53	ZACHARIUS	+61
108	HANUTA	+60
35	IMMUNITY Pp*	+59
76	ILDEFONSO Pp*	+59
107	HERZKLOPFEN	+59
1	SUNSHINE	+57
6	GS DELUXE	+56
15	HABIB	+55
8	VLATURO	+55
14	HARUN	+53

Rank	Name	P%
45	INGMAR PP*	+0,17
25	GS WIZZARD	+0,16
1	SUNSHINE	+0,15
139	VENATOR	+0,13
6	VARTA	+0,12
99	M3 Pp*	+0,12
35	IMMUNITY Pp*	+0,10
36	GS HOLBACH	+0,10
96	EDELPILZ Pp*	+0,09
101	REVOLUTION	+0,09

Rank	Name	Pkg
42	VOCO	+54
13	HERWIG	+49
7	HABANERO	+48
34	GS WUKSI	+48
107	HERZKLOPFEN	+47
8	GS WESTCOAST	+44
9	WAALKES Pp*	+44
36	SEVENUP	+44
6	GS DELUXE	+43
12	GS WHITESTAR	+43

Rank	Name	Long
18	MOAB	135
63	SPARTACUS	135
68	WETTINER	131
33	ERASMUS	128
129	GS WOIWODE	128
3	GS WUNDAWUZI	127
24	SUPERBOY	127
42	GS MYDREAM	127
3	VOLLENDET	121
36	GS HOLBACH	120

Rank	Name	Pers
40	GS HOHENAU	122
66	GS WUHUDLER	122
36	GS HOLBACH	122
12	GS WHITESTAR	120
17	GS RAZFAZ	120
14	HARUN	120
29	GS HELLSEHER	120
48	HAPPYEND	118
150	WEISSENSEE	117
16	GS DER BESTE	117

Rank	Name	Msp
28	WEYER	137
142	WITOLD	134
13	HERWIG	134
111	MANAUS	126
43	WIESEL	126
40	GS HOHENAU	125
77	HERZBOMBE	125
2	GS WINTEN	124
52	MENOP	124
92	VIKINGS PP*	124

Rank	Name	UDH
3	VOLLENDET	132
32	MAKAY	129
13	GS WOWARD	128
72	GS WHIRLPOOL	127
99	M3 Pp*	127
153	MITTELWEG	127
17	GS RAZFAZ	126
9	WAALKES Pp*	125
5	WINTERTRAUM	124
39	GS WATTSTEIN	123

Rank	Name	FEI
73	MALTE Pp*	132
18	VERDEN P*S	129
127	HABAKUK	128
10	VADUZ	127
18	MOAB	126
5	WINTERTRAUM	123
56	WESTEN	123
128	MERLO Pp*	123
169	HYPER	123
35	ELEGANT	123

Rank	Name	VIT
83	MEMBRAN P*S	121
22	MUSIKANT	120
104	WILDMOSER	120
10	JEDI	119
168	HIGI	119
36	SEVENUP	118
63	SPARTACUS	118
130	WITKOP	118
26	GS RAPIDO	116
19	GS EWIG	114

Rank	Name	CLVp
104	WILDMOSER	129
61	GS HIERHER	127
26	GS RAPIDO	127
20	GS HOERI	119
38	GS HARDY	119
63	SPARTACUS	119
100	GS WECHSEL	119
32	GS HERZBLATT	119
64	GS WONDERMAN	118
148	GS HYPOS	118

Rank	Name	CLVp
20	WINDSPIEL	120
77	HERZBOMBE	118
169	HYPER	118
152	GS WORKAHOL	117
106	MADERNO P*S	116
115	GS MALCOLM	116
155	BERGFEST	116
51	GS MANRIQUE Pp*	116
48	WINNETOO	115
3	GS WUNDAWUZI	114

Rank	Name	Fert
123	WILDHARZ	+8%
126	MERT	+5%
152	GS WORKAHOL	+5%
62	GS WEGA Pp*	+4%
68	WETTINER	+3%
76	ILDEFONSO Pp*	+3%
153	MITTELWEG	+3%
154	SANTER	+3%
30	GS VILSBERG	+3%
50	GS WATTENS	+3%

Rank	Name	FR
121	VICI Pp*	121
122	VIDI Pp*	121
10	JEDI	120
7	WOMBAT	120
92	VIKINGS PP*	120
159	GS MR MAX Pp*	120
88	WEIX	119
156	MILOS Pp*	119
33	ERASMUS	118
5	MANNA	114

Rank	Name	MU
20	WINDSPIEL	123
46	WUESTENSOHN	121
69	MARIUS	120
89	GS ELGAR	119
57	IQ Pp*	117
73	MALTE Pp*	117
11	WORLDCUP	117
8	GS WESTCOAST	116
51	MAJESTIX P*S	116
121	VICI Pp*	116

Rank	Name	FL
163	VIA APPIA Pp*	128
5	WINTERTRAUM	125
75	ERICH	123
171	WOLFELSEE Pp*	122
24	SUPERBOY	121
104	WILDMOSER	121
23	MEDIAN	119
159	GS MR MAX Pp*	119
28	WEYER	119
3	VOLLENDET	118

Rank	Name	DU
116	GS ENJOY	138
174	HABSBURGER	136
70	EPIKUR	135
85	EGELSEE	135
159	GS MR MAX Pp*	135
16	GS DER BESTE	135
33	ERASMUS	132
3	GS WUNDAWUZI	127
14	HIROTO	126
40	IVECO	124

Rank	Name	UDD
70	EPIKUR	135
116	GS ENJOY	135
85	EGELSEE	127
25	HORAZIO P*S	126
87	GS HANDSOME	125
159	GS MR MAX Pp*	125
55	HYPNOSE	124
60	GS HELOS	124
16	GS DER BESTE	123
40	IVECO	122

Rank	Name	Add
40	GS HOHENAU	112
46	WUESTENSOHN	110
8	GS WESTCOAST	109
36	SEVENUP	109
110	ZIROS	109
35	IMMUNITY Pp*	108
55	HYPNOSE	108
69	MARIUS	108
13	HERWIG	108
35	ELEGANT	108

Toplist by Total Merit Index – Proven bulls

Rg	Identification data	Partial breeding values	Milk/Conformation	Beef	Fitness	Absolute performances indicators
1	**GS ZERO ONE** DE 09 52479429 ZEPTER / WATT 2016, 5 % RF F5C A1 J	**TMI MI BI FIT TOI** *Re Re Re Re Re* *Diff Diff Diff Diff Diff* **138 125 118 114 130** *88 95 96 87 91* *+3 +2 -1 +2 +2*	**Mkg F% P%** **Fkg Pkg** **Ext-Dau** **FR-MU-FL-UD-(Add)** +735 +0,22 -0,01 +49 +25 55 Dau: 97-104-105-106-(88)	**CCI** **NDG** **CARC** **TRC** 112 *97* 107 *97* 118 *96* 112 *96*	**Long UdH ZZ Mas** **Pers FEI Bef EFD** **Perf CLV p CLV m Cyst** **Msp VIT MiBe MiFe** 112 *75* 111 *91* 112 *90* 107 *64* 97 *93* 113 *78* 0 109 *74* 105 *77* 92 *97* 105 *87* 110 *71* 102 *94* 98 *88* 103 *76* 115 *60*	**Int-Dau Farm D100 Mkg F% P% ØHd** **in 1.L MP1 D1** **in 2.L MP2 D2** **in 3.L MP3 D3** **Mat** 101 84 65 2973 4,01 3,1 9188 101 4 0 101,5 0 0 0 0 0 0
2	**GS ENJO** AT 657.692.729 GS ELVIS / POLARBAER 2016 A1, 17 J, V	**137 119 111 119 134** *95 99 99 93 95* *+3 +1 0 +1 +5*	+1011 -0,16 -0,10 +28 +27 245 Dau: 102-102-113-100-(106)	109 *99* 104 *99* 113 *98* 107 *99*	115 *82* 114 *96* 115 *97* 106 *72* 109 *99* 115 *88* 2 104 *86* 111 *77* 103 *99* 112 *96* 110 *81* 101 *98* 97 *96* 104 *88* 113 *86*	879 571 468 2783 4,01 3,17 8630 879 5 71 7178 4,12 3,45 98,8 17 2 0 0 0 0
3	**VOLLENDET** DE 09 51394297 RALDI / WEBURG 2016, 13% RF Eu, A3, A5 J	**135 120 89 126 133** *95 99 99 94 96* *-1 0 0 -3 0*	+972 -0,11 -0,07 +30 +28 404 Dau: 106-95-118-120-(102)	93 *99* 94 *99* 91 *99* 91 *99*	121 *85* 132 *96* 132 *97* 122 *75* 96 *98* 114 *89* 2 106 *87* 112 *78* 108 *99* 110 *96* 116 *83* 102 *99* 103 *96* 94 *91* 121 *87*	733 558 469 2938 3,9 3,19 8872 733 4 100 7642 4,23 3,54 101,9 22 2 0 0 0 0
4	**MANNA** AT 874.572.229 MAHANGO Pp* / JANDA 2016 Eu, A3 J	**133 123 113 109 122** *88 95 96 87 91* *-3 -3 -1 -1 0*	+1078 -0,12 -0,06 +34 +33 57 Dau: 114-104-104-101-(105)	116 *97* 122 *96* 104 *97* 110 *95*	110 *75* 108 *91* 108 *90* 105 *65* 93 *93* 106 *78* -2 111 *74* 96 *76* 100 *97* 109 *88* 93 *72* 109 *94* 103 *86* 103 *77* 109 *61*	105 89 80 2960 4,14 3,14 8536 105 6 30 7978 4,14 3,49 97,8 5 1 0 0 0 0
*5	**WOMBAT** DE 09 52729613 WOBBLER / MELCHIOR 2017, 5 % RF Eu, A3, 6 J	**133 116 112 121 129** *84 91 95 84 88* *+1 -2 +2 +2 +4*	+972 -0,27 -0,07 +17 +28 30 Dau: 120-96-105-104-(94)	116 *96* 119 *95* 106 *96* 106 *93*	113 *73* 117 *87* 117 *85* 114 *58* 107 *87* 114 *73* 0 101 *68* 106 *75* 107 *96* 111 *83* 106 *66* 103 *91* 104 *84* 102 *70* 97 *43*	40 36 4 40 2 0 0 0 0 0 0 0
6	**GS VERY GOOD** AT 501.795.129 VALEUR / REUMUT 2015, 8 % RF A1 J	**130 124 101 110 127** *92 97 97 91 94* *+1 +1 0 0 +2*	+1137 -0,18 -0,04 +32 +37 112 Dau: 109-98-103-111-(101)	101 *97* 103 *97* 102 *96* 97 *97*	112 *80* 103 *94* 101 *94* 106 *71* 105 *96* 111 *85* 1 107 *81* 115 *91* 112 *97* 110 *91* 104 *80* 107 *96* 90 *88* 98 *81* 108 *78*	204 166 194 2811 3,89 3,14 8444 204 7 160 7491 4,1 3,38 97,5 108 4 7 8070 3,91 3,52 1 2 0
7	**HERWIG** AT 794.839.429 HERZSCHLAG / WILLE 2016 Eu, A3 J	**129 135 113 88 117** *88 95 94 87 91* *-3 -3 -1 0 +1*	+1330 -0,05 +0,02 +51 +49 61 Dau: 112-102-94-113-(108)	114 *96* 116 *94* 109 *96* 107 *93*	92 *77* 92 *90* 91 *89* 94 *66* 85 *93* 89 *78* -4 103 *74* 90 *77* 100 *95* 110 *86* 94 *73* 134 *94* 104 *83* 101 *76* 119 *57*	79 67 64 2909 4,22 3,28 8586 79 5 10 7993 4,29 3,55 99 0 0 0 0 0 0
8	**GS RENEGADE** AT 583.231.928 RUKSI / WALDBRAND 2014, 9 % RF A1 J	**129 123 106 108 124** *93 97 97 92 95* *0 -1 0 +1 +1*	+432 +0,38 +0,08 +49 +22 91 Dau: 103-86-93-113-(98)	109 *98* 100 *97* 106 *97* 106 *96*	102 *82* 112 *94* 111 *94* 109 *72* 108 *96* 102 *87* 2 107 *83* 108 *95* 116 *99* 99 *93* 98 *82* 108 *96* 101 *96* 102 *81* 114 *81*	170 151 158 2716 4,2 3,11 8139 170 7 152 7136 4,46 3,4 92,5 131 7 99 7710 4,67 3,61 70 5 11 8581 4,56 3,45
9	**GS DER BESTE** AT 514.740.229 DAX / REUMUT 2016 F5C A1, A9, 17 J	**129 122 102 108 132** *97 99 99 96 97* *-2 -2 +1 -1 0*	+857 +0,06 -0,04 +41 +27 808 Dau: 110-104-101-135-(106)	100 *99* 100 *99* 110 *99* 92 *99*	110 *90* 105 *98* 104 *99* 104 *86* 117 *99* 103 *94* 0 93 *93* 112 *87* 107 *99* 111 *98* 106 *91* 100 *99* 94 *98* 90 *95* 122 *95*	1627 1045 1201 2803 4,18 3,24 9193 1627 5 483 7730 4,35 3,49 99,5 239 2 0 0 0 0
10	**GS HERZTAKT** AT 913.133.329 HERZSCHLAG / VLAX 2016, 6 % RF A1 J	**129 120 109 110 127** *93 98 99 92 94* *+1 -1 +1 +3 +4*	+982 -0,02 -0,15 +39 +22 144 Dau: 93-103-98-114-(104)	113 *99* 105 *99* 104 *99* 109 *99*	101 *81* 115 *95* 117 *95* 105 *76* 112 *97* 98 *87* 1 102 *84* 101 *76* 110 *99* 104 *94* 99 *81* 104 *98* 112 *96* 108 *87* 121 *81*	414 330 219 2924 3,97 3,1 9144 414 4 23 7547 4,15 3,48 101,6 2 1 0 0 0 0
11	**GS EWIG** AT 334.524.838 ETOSCHA / GS WALCH 2017 A1 J	**129 115 112 114 124** *85 92 97 84 89* *+1 -1 0 0 0*	+878 -0,22 -0,09 +17 +24 26 Dau: 97-113-100-110-(104)	113 *98* 103 *98* 111 *97* 110 *97*	115 *72* 112 *88* 109 *86* 114 *59* 100 *89* 103 *73* 0 103 *69* 98 *75* 99 *97* 102 *85* 97 *67* 124 *92* 114 *89* 102 *70* 101 *49*	56 55 10 2588 3,71 3,03 8615 56 2 0 98,7 0 0 0 0 0 0
12	**HAMMER** AT 076.990.529 HERZSCHLAG / MANIGO 2016 Eu, A3, 6 J	**128 128 98 103 122** *91 97 97 89 92* *0 0 0 0 +3*	+1083 +0,06 -0,05 +51 +34 98 Dau: 95-102-110-112-(105)	105 *98* 108 *97* 90 *96* 104 *96*	103 *77* 95 *93* 94 *93* 100 *66* 103 *95* 102 *80* 0 104 *77* 90 *77* 107 *99* 111 *92* 103 *73* 115 *95* 107 *95* 111 *79* 107 *67*	187 162 125 2843 4,16 3,21 8720 187 4 2 99,4 0 0 0 0 0 0
13	**GS MAXIMAL** AT 023.375.729 MARTIN / REUMUT 2015 A1, 17 J, V	**128 116 110 113 124** *95 99 99 94 96* *-3 -1 0 -2 -3*	+764 -0,02 -0,10 +30 +18 195 Dau: 108-112-100-106-(102)	113 *99* 108 *99* 110 *98* 106 *99*	105 *86* 109 *96* 110 *97* 103 *77* 108 *98* 112 *90* 2 108 *87* 109 *94* 111 *99* 99 *95* 105 *86* 97 *98* 103 *94* 103 *88* 113 *88*	495 377 423 2506 3,91 3,06 7535 495 7 303 6591 4,12 3,31 93,4 204 4 22 7813 4,24 3,51 4 2 0
14	**GS WIZZARD** AT 411.065.428 WATNOX / GS VULVUS 2014, 7 % RF A1 J	**128 113 121 110 129** *95 98 98 94 96* *-3 -2 0 -2 -1*	+161 +0,18 +0,16 +21 +18 145 Dau: 103-115-107-118-(105)	120 *99* 117 *99* 118 *98* 114 *98*	109 *86* 115 *96* 111 *96* 122 *77* 106 *98* 101 *90* -1 101 *87* 119 *96* 99 *99* 95 *94* 110 *86* 105 *97* 102 *95* 93 *86* 107 *88*	367 299 343 2434 4,13 3,28 7886 367 7 308 6513 4,35 3,52 93,4 249 6 120 7410 4,35 3,53 72 4 4
*15	**GS RAPIDO** AT 155.420.338 GS RENEGADE / ZAUBER 2016, 5 % RF A1 J	**127 118 105 112 127** *87 94 99 85 90* *+1 -1 +2 0 +1*	+644 +0,23 -0,15 +46 +10 35 Dau: 91-93-106-101-(104)	113 *99* 93 *99* 113 *99* 100 *99*	108 *70* 104 *90* 105 *89* 102 *56* 112 *92* 106 *74* 1 107 *70* 111 *74* 127 *99* 98 *88* 96 *65* 102 *94* 116 *94* 98 *74* 106 *56*	104 92 35 2696 4,07 3,03 8928 104 3 0 98,4 0 0 0 0 0 0
*16	**WEYER** AT 268.534.138 GS WATTKING / MANIGO 2017, 5 % RF Eu, A3, A5 J	**127 115 120 107 128** *86 92 99 87 90* *-3 0 -4 -3 -4*	+961 -0,22 -0,15 +21 +21 23 Dau: 95-96-119-108-(104)	113 *99* 102 *99* 126 *99* 113 *98*	119 *76* 92 *88* 90 *86* 98 *66* 91 *88* 110 *77* 0 104 *72* 109 *77* 94 *99* 106 *91* 112 *71* 137 *91* 98 *97* 101 *70* 111 *44*	57 46 2 57 1 0 0 0 0 0 0 0

Toplist by Total Merit Index – Proven bulls

	Identification data		Partial breeding values					Milk/Conformation			Beef		Fitness								Absolute performances indicators						
Rg	Name ID		TMI	MI	BI	FIT	TOI	Mkg	F%	P%	CCI		Long		UdH		ZZ		Mas		Int-Dau	Farm	D100	Mkg	F%	P%	ØHd
	Sire / Dam's sire		Re	Re	Re	Re	Re		Fkg	Pkg	NDG		Pers		FEI		Bef		EFD		in 1.L	MP1	D1				
	YoB, Foreign	Genet. def.	Diff	Diff	Diff	Diff	Diff	Ext-Dau			CARC		Perf		CLV p		CLV m		Cyst		in 2.L	MP2	D2				Mat
	Al Center	Availability						FR-MU-FL-UD-(Add)			TRC		Msp		VIT		MiBe		MiFe		in 3.L	MP3	D3				
17	**GS HELLSEHER** AT 332.704.238		**126**	**118**	**101**	**111**	**125**	+928	-0,21	-0,02	103	*98*	114	*77*	100	*94*	99	*94*	107	*68*	255	214	166	2790	3,89	3,19	8704
	HARIBO / REUMUT		*92*	*97*	*98*	*90*	*93*		+20	+31	90	*98*	120	*96*	105	*82*	-1		101	*79*	255	5	27	7956	3,98	3,49	98,9
	2016		*+ 2*	*+ 1*	*0*	*0*	*+ 3*	105 Dau:			106	*98*	109	*76*	112	*98*	94	*91*	105	*76*	5	1	0				
	A1	J						89-103-100-97-(107)			101	*98*	110	*97*	108	*91*	93	*83*	112	*74*	0	0	0				
18	**GS VILSBERG** AT 089.797.938		**125**	**127**	**92**	**104**	**118**	+867	+0,10	+0,04	98	*95*	100	*73*	101	*88*	104	*87*	92	*59*	63	55	35	2832	4,09	3,16	9007
	VOCO / WILLENBERG		*86*	*93*	*93*	*85*	*89*		+45	+34	104	*94*	105	*91*	103	*75*	3		102	*70*	63	4	4				97,3
	2016	B2C	*- 3*	*- 2*	*- 2*	*- 2*	*- 1*	38 Dau:			96	*93*	104	*76*	109	*95*	107	*84*	95	*68*	1	1	0				
	A1	J						104-85-111-97-(105)			87	*92*	113	*92*	103	*82*	87	*70*	97	*52*	0	0	0				
19	**MANDRIN** AT 650.446.817		**125**	**121**	**109**	**102**	**119**	+1020	-0,16	-0,05	116	*99*	101	*99*	99	*99*	103	*99*	89	*98*	14550	6484	13249	2857	3,99	3,14	8460
	MANDARIN / VANSTEIN		*99*	*99*	*99*	*99*	*99*		+28	+32	108	*99*	102	*99*	99	*99*	1		92	*99*	14550	7	10902	7690	4,16	3,45	97,1
	2009		*- 2*	*- 1*	*- 1*	*- 1*	*- 2*	2308 Dau:			107	*99*	109	*99*	113	*99*	95	*99*	103	*99*	8652	6	4148	8641	4,2	3,58	
	Eu, A3	J						96-92-99-98-(103)			107	*99*	98	*99*	114	*99*	104	*99*	94	*99*	2487	4	451	8820	4,19	3,51	
20	**GS HERZBLATT** AT 351.300.338		**125**	**120**	**100**	**107**	**124**	+657	+0,16	-0,03	109	*99*	107	*79*	97	*94*	95	*94*	104	*70*	305	240	233	2600	4,2	3,17	8002
	HERZSCHLAG / VANSTEIN		*92*	*98*	*98*	*91*	*93*		+41	+21	107	*99*	107	*97*	105	*84*	2		111	*81*	305	6	74	6809	4,31	3,41	97,4
	2016		*+ 1*	*- 1*	*0*	*+ 1*	*+ 3*	133 Dau:			94	*98*	101	*75*	119	*99*	108	*92*	99	*78*	14	2	0				
	A1	J						91-100-101-112-(101)			102	*98*	123	*97*	110	*93*	110	*84*	113	*78*	0	0	0				
21	**GS WILLHABEN** AT 398.243.329		**125**	**118**	**94**	**115**	**123**	+839	-0,21	+0,03	99	*98*	107	*77*	113	*93*	113	*93*	109	*66*	217	193	165	2736	3,94	3,21	8326
	GS WORLDWIDE / WALDBRAND		*91*	*97*	*97*	*89*	*92*		+17	+32	107	*98*	111	*96*	111	*81*	1		97	*78*	217	6	64	7663	4,09	3,41	97
	2016, 6 % RF		*- 2*	*- 1*	*0*	*- 1*	*0*	72 Dau:			93	*97*	107	*75*	106	*98*	106	*91*	111	*75*	17	2	0				
	A1	J						105-98-102-110-(106)			91	*97*	106	*96*	102	*89*	110	*81*	115	*72*	0	0	0				
*22	**GS WORKER** AT 336.640.438		**125**	**116**	**99**	**114**	**127**	+722	-0,16	+0,02	99	*97*	109	*75*	109	*90*	110	*89*	102	*64*	80	69	21	3035	3,7	3,31	9758
	WIFFZACK / REUMUT		*87*	*94*	*97*	*87*	*90*		+16	+27	91	*97*	114	*92*	107	*77*	0		96	*73*	80	2	0				102,6
	2017, 5 % RF		*+ 2*	*0*	*+ 1*	*+ 1*	*+ 1*	33 Dau:			107	*96*	113	*78*	104	*97*	110	*87*	102	*70*	0	0	0				
	A1	J						105-82-108-106-(101)			96	*96*	116	*94*	103	*88*	101	*76*	108	*56*	0	0	0				
*23	**GS HOLBACH** AT 527.400.838		**125**	**113**	**91**	**123**	**128**	+240	+0,14	+0,10	98	*98*	120	*73*	112	*89*	110	*87*	111	*61*	65	58	28	2602	4,18	3,21	8781
	HARIBO / GS VOGT		*86*	*93*	*97*	*85*	*89*		+22	+17	92	*98*	122	*90*	110	*75*	1		103	*71*	65	3	0				101,2
	2016		*+ 2*	*+ 1*	*+ 2*	*- 2*	*+ 2*	30 Dau:			83	*97*	110	*76*	108	*98*	106	*86*	102	*68*	0	0	0				
	A1	J						91-108-97-119-(105)			104	*97*	102	*93*	113	*89*	94	*72*	105	*52*	0	0	0				
24	**GS WATTSTEIN** AT 338.785.438		**125**	**110**	**102**	**120**	**124**	+543	-0,17	-0,02	103	*97*	116	*75*	123	*90*	121	*89*	120	*63*	79	73	58	2622	3,96	3,22	8427
	WATT / GS WALDSTEIN		*87*	*94*	*96*	*87*	*90*		+ 8	+18	107	*97*	110	*92*	104	*77*	-10		99	*73*	79	5	25	7038	4,04	3,45	96,9
	2016, 7 % RF		*- 2*	*- 2*	*0*	*- 1*	*- 1*	35 Dau:			99	*96*	106	*76*	89	*96*	111	*85*	103	*71*	6	2	0				
	A1	J						112-113-100-112-(107)			103	*96*	105	*93*	108	*85*	95	*73*	109	*57*	0	0	0				
*25	**GS EHRSAM** AT 323.508.538		**125**	**104**	**114**	**120**	**127**	+172	+0,04	-0,04	116	*99*	119	*76*	113	*90*	113	*89*	105	*64*	109	97	29	2744	3,97	3,11	9641
	ETOSCHA / WILLIAMS		*88*	*95*	*98*	*88*	*91*		+11	+ 3	106	*98*	101	*92*	111	*79*	0		103	*75*	109	2	0				102,9
	2017, 5 % RF		*0*	*- 1*	*0*	*+ 1*	*+ 1*	61 Dau:			115	*98*	89	*77*	108	*99*	113	*92*	106	*72*	0	0	0				
	A1, 17	J, V						100-110-115-120-(103)			109	*98*	116	*94*	110	*97*	108	*75*	102	*59*	0	0	0				
*26	**WIESEL** AT 265.604.838		**124**	**127**	**111**	**95**	**114**	+1126	-0,07	-0,03	109	*97*	95	*72*	80	*86*	81	*83*	84	*59*	29	27	7	2617	3,62	3,09	8588
	WIFFZACK / ISERANDERS		*83*	*90*	*96*	*84*	*87*		+40	+37	111	*96*	95	*85*	112	*73*	1		111	*68*	29	2	0				96,6
	2016		*- 3*	*- 2*	*- 1*	*- 2*	*- 3*	20 Dau:			114	*97*	100	*76*	97	*96*	97	*82*	107	*66*	0	0	0				
	Eu, A3, A8	J						101-83-98-99-(105)			102	*95*	126	*90*	96	*85*	101	*68*	114	*41*	0	0	0				
*27	**GS HELVETIUS** AT 152.922.438		**124**	**126**	**98**	**100**	**116**	+907	+0,15	-0,05	103	*99*	108	*76*	109	*91*	108	*90*	107	*64*	116	100	31	2751	4,33	3,1	8514
	HERZSCHLAG / REUMUT		*89*	*95*	*98*	*88*	*91*		+51	+28	102	*98*	93	*93*	88	*78*	-1		97	*74*	116	2	0				101,2
	2016		*0*	*- 3*	*+ 2*	*+ 2*	*+ 3*	41 Dau:			101	*98*	90	*77*	115	*99*	107	*90*	96	*71*	0	0	0				
	A1, 17	J, V						96-92-100-113-(102)			94	*98*	114	*95*	103	*94*	99	*77*	104	*58*	0	0	0				
28	**WIGWAM** AT 246.004.928		**124**	**116**	**116**	**105**	**118**	+672	-0,18	+0,08	117	*97*	101	*79*	108	*93*	110	*92*	100	*70*	95	82	93	2719	4,09	3,26	8267
	WIKINGER / STROMER		*90*	*96*	*95*	*90*	*93*		+13	+31	113	*96*	103	*94*	100	*83*	1		108	*79*	95	7	87	7484	4,1	3,51	92,8
	2014		*- 1*	*- 1*	*0*	*+ 1*	*- 1*	60 Dau:			114	*96*	101	*92*	100	*98*	104	*89*	98	*78*	77	7	63	8476	4,12	3,59	
	Eu, A3	J						112-107-98-106-(106)			111	*94*	95	*94*	105	*88*	95	*75*	126	*73*	49	5	5	10656	3,99	3,47	
29	**GS WATTENS** AT 044.483.329		**124**	**110**	**104**	**118**	**124**	+441	-0,09	+0,03	105	*97*	108	*79*	118	*92*	118	*92*	115	*69*	137	117	129	2567	3,98	3,21	8146
	WATT / MANITOBA		*90*	*96*	*96*	*90*	*93*		+11	+18	108	*97*	115	*95*	112	*83*	3		103	*79*	137	7	106	7073	4,14	3,43	92,3
	2015, 10 % RF		*- 1*	*- 1*	*0*	*- 2*	*+ 1*	78 Dau:			101	*97*	114	*90*	100	*96*	105	*89*	111	*78*	78	5	11	8385	4,28	3,71	
	A1	J						105-103-97-106-(106)			102	*96*	103	*95*	100	*85*	111	*78*	110	*72*	2	1	0				
30	**GS MANRIQUE Pp*** AT 781.075.229		**124**	**110**	**91**	**123**	**126**	+886	-0,27	-0,17	98	*99*	120	*80*	113	*95*	113	*96*	111	*73*	485	392	293	2752	3,8	3,07	8575
	MAHANGO Pp* / GS RAU		*94*	*98*	*99*	*92*	*95*		+13	+17	94	*99*	116	*98*	112	*86*	2		104	*84*	485	4	41	7245	4,12	3,39	98,8
	2016, 7 % RF		*+ 1*	*- 1*	*0*	*0*	*+ 4*	158 Dau:			92	*99*	102	*76*	111	*99*	116	*95*	96	*80*	9	1	0				
	A1	J						105-107-103-108-(103)			95	*99*	91	*98*	110	*96*	108	*88*	113	*83*	0	0	0				
31	**GS MA 17 Pp*** AT 499.988.929		**123**	**122**	**102**	**102**	**113**	+1339	-0,20	-0,20	104	*99*	100	*81*	112	*95*	112	*95*	109	*73*	371	297	218	2866	3,92	3,08	8441
	MAHANGO Pp* / HURRICAN		*93*	*98*	*99*	*91*	*94*		+38	+29	115	*99*	102	*97*	91	*85*	1		102	*83*	371	4	38	7552	4	3,36	97,5
	2016		*0*	*- 2*	*+ 1*	*+ 2*	*+ 2*	138 Dau:			89	*99*	99	*78*	90	*99*	107	*94*	92	*80*	12	2	0				
	A1	J						128-109-98-98-(98)			106	*99*	107	*98*	104	*95*	102	*87*	114	*80*	0	0	0				
32	**GS MCDRIVE Pp*** AT 499.987.829		**123**	**119**	**106**	**105**	**116**	+543	+0,10	+0,07	106	*99*	99	*85*	120	*96*	120	*97*	113	*78*	619	481	374	2808	4,12	3,28	8715
	MAHANGO Pp* / HURRICAN		*95*	*99*	*99*	*94*	*96*		+31	+25	113	*99*	93	*98*	99	*89*	3		106	*87*	619	5	83	7371	4,29	3,57	99,7
	2016		*- 2*	*- 2*	*- 1*	*0*	*+ 2*	237 Dau:			94	*99*	98	*78*	98	*99*	110	*96*	97	*84*	23	2	0				
	A1, 17	J						111-121-98-109-(98)			111	*99*	94	*98*	95	*97*	103	*89*	113	*85*	0	0	0				

GS ZERO ONE

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DE 09 52479429
GENOSTAR

Breeder: Germany

DESCENT		
ZEPTER DE 09 49287315 TMI: 124 / 117 / +531 +0.18 -0.02	**ZASPIN** DE 08 14101128	**ZASPORT**
	NELE DE 09 46878899	**HUTOED**
LALA DE 09 49532759 TMI: 126 / 116 / +550 +0.01 +0.03 2/1 - 10,050-4.19-3.75-798 HL: 1. - 10,050-4.19-3.75-798	**WATT** DE 09 45875179	**WILLENBERG**
	LOREEN DE 09 47380093 2/2 - 8,167-4.61-3.87-693	**REUMUT**

CONFORMATION 97 – 104 – 105 – 106 (91)

55 DAUGHTERS			76 88 100 112 124 136	
Frame	**97**			
Muscularity	**104**			
Feed & legs	**105**			
Udder	**106**			
Cross height	95	small		large
Body length	101	short		long
Rump width	100	narrow		wide
Body depth	101	shallow		deep
Rump angle	112	rising		sloped
Hock angularity	109	steep		sickled
Hock development	101	spongy		dry
Pasterns	102	weak		strong
Hoof height	106	low		steep
Fore udder length	115	short		long
Rear udder length	109	short		long
Fore udder attach.	93	loose		tight
Ligament	111	weak		strong
Udder depth	98	deep		high
Teat length	103	short		long
Teat thickness	104	thin		thick
Fore teat placement	101	wide		close
Rear teat placement	119	wide		close
Rear teats attitude	120	outwards		inwards
Udder cleanness	88	add. teats		clean udder

= optimal range

Breeding Value:
gTMI 138 (88) | BI 118 (96) | FIT 114 (87) | TOI 130 (91)
MI 125 (95) +735 +0.22 +49 -0.01 +25

Hereditary transmission: This proven sire comes from a very well-established cow family in Bavaria, and his daughters have attracted a lot of positive attention from breeding consultants. Based on this estimation, he was able to increase his breeding value as well as his conformation score. He now clearly ranks among the top bulls with tested daughters. In addition to a good milk yield with very high fat content, he scores points with a very high meat value, good udder health and very good fertility. GS ZERO ONE is not just suitable for insemination of heifers. Attention should be had for the genetic defect F5C during pairing.

WOMBAT

© KeLeKi

DE 09 52729613
OÖ Besamungsstation

Breeder: Seilbeck Josef
84424 Isen/De

DESCENT		
WOBBLER DE 09 46673832 TMI: 125 / 112 / +775 -0.26 -0.05	**WATNOX** DE 09 38662295	**WATERBERG**
	SINDI DE 09 41277398	**MANDELA**
RILA DE 09 50065843 TMI: 121 / 123 / +779 +0.08 +0.00 1/1 - 9,642-3.88-3.04-667 HL: 1. - 9,642-3.88-3.04-667	**MELCHIOR** DE 09 45893915	**MERCATOR**
	RINNISE DE 09 47410957 2/2 -10,210-3.91-3.69-776	**WALDBRAND**

CONFORMATION 120 – 96 – 105 – 104 (88)

30 DAUGHTERS			76 88 100 112 124 136	
Frame	**120**			
Muscularity	**96**			
Feed & legs	**105**			
Udder	**104**			
Cross height	121	small		large
Body length	120	short		long
Rump width	116	narrow		wide
Body depth	115	shallow		deep
Rump angle	108	rising		sloped
Hock angularity	106	steep		sickled
Hock development	102	spongy		dry
Pasterns	99	weak		strong
Hoof height	104	low		steep
Fore udder length	105	short		long
Rear udder length	100	short		long
Fore udder attach.	98	loose		tight
Ligament	96	weak		strong
Udder depth	99	deep		high
Teat length	91	short		long
Teat thickness	92	thin		thick
Fore teat placement	124	wide		close
Rear teat placement	115	wide		close
Rear teats attitude	108	outwards		inwards
Udder cleanness	94	add. teats		clean udder

= optimal range

Breeding Value:
gTMI 133 (84) | BI 112 (95) | FIT 121 (84) | TOI 129 (88)
MI 116 (91) +972 -0.27 +17 -0.07 +28

Hereditary transmission: WOMBAT makes for unbelievable quantities of frame, as well as milk and beef, at a high level. He's been raised a little differently by dam's sire MELCHIOR and the daughter-proven WOBBLER-Sohn, who exhibits optimum breeding values. The fitness characteristics are among his greatest strengths, with a somewhat weaker milk content inheritance. He combines excellent udder health with optimum fertility on the part of his daughters, together with excellent calf characteristics in both the paternal and maternal lines. WOMBAT can be deployed for optimum teat placement.

Toplist by Total Merit Index – Genomic young bulls

	Identification data		Partial breeding values					Milk			Beef		Fitness								Conformation			
Rg	Name ID Sire / Dam's sire Genet. def.	YoB, Foreign AI Center Availability	TMI *Si* *Diff*	MI *Si* *Diff*	BI *Si* *Diff*	FIT *Si* *Diff*	TOI *Si* *Diff*	Mkg	F% Fkg	P% Pkg	NDG CARC TRC		Long Pers Perf		UdH CLV p VIT		SCC CLF m Msp		FEI Bef MiBe		FR *Re*	MU	FL	UD Add
1	**GS WINTEN** AT 951.695.369 WEISSENSEE / GS WRIGLEY	2020 A1 J	**143** *74* *+ 1*	**128** *83* *- 1*	**105** *75* *+ 1*	**124** *79* *+ 1*	**135** *81* *- 1*	+1099	-0,09 +38 +39	0,00	110 103 102	*76* *75* *74*	124 115 101	*68* *74* *71*	117 104 101	*79* *79* *72*	116 107 124	*74* *75* *82*	111 104	*68* *58*	105 *79*	101	100	111 105
2	**GS WUNDAWUZI** AT 195.270.174 WESTWIND / GS DER BESTE	2020 A1, 17 J	**143** *72* *0*	**127** *82* *- 1*	**106** *69* *+ 2*	**129** *76* *0*	**143** *78* *0*	+1192	-0,12 +39 +37	-0,06	102 107 104	*71* *69* *68*	127 114 111	*65* *73* *67*	117 105 98	*78* *80* *69*	115 114 106	*73* *71* *81*	118 99	*64* *56*	104 *77*	107	105	127 106
*3	**GS DUPLO** AT 452.848.574 GS DEFACTO / GS WATTKING F5C	2020 A1 E	**142** *71* *new*	**121** *81* *new*	**116** *70* *new*	**128** *76* *new*	**140** *78* *new*	+703	+0,01 +30 +28	+0,04	108 122 105	*70* *69* *68*	125 100 110	*65* *72* *69*	115 101 109	*78* *79* *68*	113 110 114	*72* *70* *80*	122 96	*64* *55*	99 *77*	104	104	114 103
4	**WINTERTRAUM** AT 989.327.769 GS WOIWODE / GS DER BESTE	2019 A1, 2, 17 J, E, E	**142** *72* *- 2*	**121** *81* *- 1*	**107** *75* *- 2*	**135** *77* *0*	**146** *79* *- 2*	+1137	-0,26 +24 +34	-0,07	99 109 106	*77* *74* *72*	126 113 109	*66* *72* *68*	124 117 108	*78* *79* *69*	122 109 113	*72* *72* *79*	123 98	*65* *55*	104 *76*	93	125	125 102
5	**GS DELUXE** AT 104.570.274 GS DEFACTO / HERZSCHLAG	2020 A1, 2, 17 E, J, J	**141** *73* *- 3*	**135** *82* *- 2*	**115** *71* *+ 2*	**110** *78* *- 3*	**132** *80* *0*	+1155	+0,09 +56 +43	+0,02	127 106 107	*72* *70* *69*	105 102 105	*66* *74* *70*	114 98 99	*79* *79* *70*	110 107 112	*74* *72* *82*	105 104	*66* *58*	113 *78*	101	108	112 100
*6	**GS WESTCOAST** AT 382.306.974 WUESTENSOHN / HERZSCHLAG	2020, 9 % RF A1 J	**141** *71* *new*	**132** *81* *new*	**119** *69* *new*	**111** *76* *new*	**133** *78* *new*	+1280	-0,07 +46 +44	-0,01	127 108 116	*70* *69* *67*	111 96 102	*65* *72* *67*	113 110 103	*78* *78* *68*	113 104 109	*72* *71* *80*	105 102	*64* *55*	105 *76*	116	113	109 109
7	**GS WUNDERINO** AT 097.146.569 WEISSENSEE / REUMUT	2019 A1 J	**141** *74* *- 2*	**124** *83* *0*	**114** *76* *- 1*	**126** *79* *- 3*	**135** *81* *- 4*	+628	+0,15 +39 +29	+0,08	108 115 108	*77* *76* *75*	116 103 111	*68* *74* *71*	124 105 104	*80* *82* *73*	123 108 102	*74* *75* *82*	120 104	*68* *58*	100 *79*	104	96	109 96
8	**GS WHITESTAR** AT 967.500.169 GS WOIWODE / HARIBO TPC	2019 A1 J	**140** *73* *- 4*	**130** *82* *- 2*	**103** *74* *- 3*	**122** *78* *- 3*	**138** *80* *- 3*	+1309	-0,15 +41 +43	-0,04	95 106 104	*75* *74* *72*	119 120 114	*67* *73* *70*	120 110 105	*79* *79* *71*	121 104 103	*73* *73* *81*	105 97	*66* *58*	110 *78*	102	107	118 106
9	**GS WOWARD** AT 824.640.769 WODONGA / RALDI	2020, 7 % RF A1, 2, 17 J	**140** *73* *0*	**130** *82* *0*	**88** *74* *+ 1*	**131** *77* *0*	**139** *79* *0*	+907	+0,13 +49 +36	+0,05	96 89 91	*76* *73* *72*	121 113 116	*66* *74* *69*	128 110 105	*78* *80* *70*	125 112 99	*73* *72* *81*	117 107	*65* *56*	112 *78*	100	108	119 101
10	**HABIB** AT 919.385.169 HOOLIGAN / MANDRIN	2020 Eu, A3 J	**140** *75* *0*	**126** *85* *- 2*	**110** *73* *0*	**118** *79* *+ 1*	**131** *81* *- 1*	+609	+0,35 +55 +24	+0,03	104 115 104	*75* *74* *73*	111 104 104	*67* *78* *70*	107 110 117	*81* *80* *70*	107 112 117	*77* *74* *84*	113 101	*68* *62*	108 *80*	101	86	103 94
11	**WILKO** AT 857.214.169 GS WOIWODE / WABAN	2020, 5 % RF Eu, A3, A8 J	**140** *72* *- 2*	**126** *81* *- 2*	**105** *73* *- 2*	**126** *77* *- 1*	**136** *79* *- 1*	+1319	-0,24 +33 +39	-0,08	96 106 108	*74* *73* *72*	117 111 109	*66* *72* *68*	114 97 108	*78* *78* *69*	113 110 113	*72* *72* *80*	120 95	*65* *55*	106 *76*	101	104	108 105
12	**GS RAZFAZ** AT 095.456.669 ROLLS / ETOSCHA F2C	2019 A1 J	**140** *75* *- 1*	**122** *84* *- 2*	**119** *75* *- 1*	**123** *79* *0*	**139** *81* *- 2*	+909	-0,02 +36 +27	-0,06	117 112 116	*76* *76* *74*	115 120 114	*67* *76* *70*	126 112 108	*80* *96* *79*	125 101 105	*76* *76* *82*	105 1 104	*67* *58*	92 *80*	110	108	113 104
13	**MOAB** AT 237.166.769 MINOR / HURLYS	2019 Eu, A3, 6 J	**140** *74* *- 1*	**121** *84* *- 2*	**94** *72* *0*	**136** *78* *- 1*	**139** *80* *- 1*	+1030	-0,18 +27 +32	-0,05	93 97 95	*73* *71* *71*	135 110 105	*66* *77* *70*	116 106 114	*80* *79* *67*	113 104 107	*76* *72* *82*	126 99	*66* *56*	89 *79*	95	109	123 103
14	**GS HOERI** AT 196.383.369 HOKUSPOKUS / RUKSI	2019, 4 % RF A1, A9, 2 J	**139** *73* *- 2*	**130** *84* *- 1*	**106** *73* *- 2*	**121** *77* *- 1*	**136** *79* *0*	+777	+0,25 +54 +32	+0,05	100 107 106	*75* *71* *71*	116 103 101	*65* *76* *69*	108 119 114	*79* *83* *68*	103 104 95	*75* *71* *81*	118 91	*65* *56*	103 *77*	92	115	121 100
15	**GS WLADI** AT 713.571.869 GS WOIWODE / VARTA	2019, 8 % RF A1 J	**139** *71* *- 1*	**130** *81* *0*	**100** *71* *- 1*	**125** *75* *- 2*	**135** *78* *+ 2*	+1289	-0,14 +41 +43	-0,03	90 104 103	*72* *72* *70*	117 111 108	*64* *71* *68*	116 108 115	*77* *77* *68*	116 106 94	*71* *70* *78*	115 103	*63* *53*	90 *75*	100	103	112 102
*16	**MUSIKANT** AT 021.437.374 MANAUS / HURLY	2020 Eu, A8 J	**139** *71* *new*	**127** *81* *new*	**116** *71* *new*	**118** *76* *new*	**132** *78* *new*	+1262	-0,11 +42 +33	-0,13	112 113 110	*73* *72* *70*	110 105 104	*65* *72* *67*	106 101 120	*77* *78* *69*	105 105 104	*71* *72* *78*	114 92	*64* *54*	98 *76*	107	110	100 101
17	**MEDIAN** AT 201.692.574 GS MYSTERIUM Pp* / VILLEROY	2020, 5 % RF Eu, A3, 6 J	**139** *72* *0*	**127** *81* *- 1*	**115** *73* *+ 2*	**114** *77* *- 1*	**137** *79* *+ 2*	+1414	-0,28 +33 +41	-0,10	113 110 112	*74* *73* *71*	122 100 108	*66* *73* *69*	117 105 113	*78* *78* *70*	120 102 113	*73* *73* *80*	94 105	*66* *56*	104 *77*	103	119	119 106
*18	**SUPERBOY** AT 462.742.874 SPARTACUS / ZAZU	2020 Eu, A3, A5 J, J, N	**139** *70* *new*	**126** *81* *new*	**109** *68* *new*	**123** *75* *new*	**138** *77* *new*	+789	+0,09 +41 +32	+0,05	112 107 104	*69* *68* *67*	127 95 111	*64* *72* *66*	117 107 112	*77* *78* *68*	118 101 100	*71* *70* *79*	110 104	*63* *53*	115 *75*	101	121	120 99
19	**HORAZIO P*S** AT 226.832.169 HILFINGER / MAHANGO Pp*	2019 Eu, A3, A5 J	**139** *76* *0*	**125** *86* *0*	**106** *74* *- 2*	**123** *80* *0*	**132** *82* *- 1*	+798	+0,09 +41 +30	+0,02	112 105 100	*75* *74* *73*	117 114 96	*68* *78* *70*	117 112 109	*81* *97* *81*	113 110 99	*77* *77* *84*	111 99	*68* 0 *60*	117 *80*	95	100	115 99
20	**GS HELLSTORM** AT 571.984.669 HELSINKI / GS DER BESTE	2020 A1 J	**139** *74* *- 2*	**124** *84* *- 2*	**109** *72* *- 1*	**124** *78* *0*	**137** *80* *- 4*	+1277	-0,17 +38 +29	-0,17	94 116 105	*74* *72* *71*	120 109 103	*67* *76* *69*	117 115 110	*80* *78* *69*	116 106 114	*76* *72* *82*	112 94	*66* *58*	99 *79*	104	113	118 104
*21	**GS WAMBLEE** AT 505.532.674 WUESTENSOHN / GS WOHLTAT	2020, 7 % RF A1 J	**139** *72* *new*	**123** *82* *new*	**116** *69* *new*	**123** *77* *new*	**136** *79* *new*	+900	-0,15 +24 +37	+0,06	110 114 112	*71* *69* *68*	117 101 110	*66* *73* *69*	122 99 106	*78* *80* *69*	120 109 101	*73* *72* *80*	113 100	*65* *55*	103 *77*	109	106	115 105

New bulls are orange-coloured

Toplist by Total Merit Index – Genomic young bulls

	Identification data		Partial breeding values					Milk			Beef		Fitness								Conformation			
Rg	Name ID Sire / Dam's sire Genet. def.	YoB, Foreign Al Center Availability	TMI *Si* *Diff*	MI *Si* *Diff*	BI *Si* *Diff*	FIT *Si* *Diff*	TOI *Si* *Diff*	Mkg	F% Fkg	P% Pkg	NDG CARC TRC		Long Pers Perf		UdH CLV p VIT		SCC CLF m Msp		FEI Bef MiBe		FR *Re*	MU	FL	UD Add
22	**HAMLET Pp*** AT 147.665.169 HERMELIN / MAHANGO Pp* 	2019 Eu, A3, A5 J	**138** *77* *-4*	**125** *85* *-4*	**116** *77* *0*	**117** *81* *0*	**134** *83* *-5*	+1162	-0,09 +40 	-0,11 +31 	107 118 110	*78* *78* *75*	121 106 107	*69* *78* *71*	111 98 99	*82* *99* *86*	112 107 112	*77* *83* *84*	108 2 101	*70* *61*	102 *81*	103	109	110 102
*23	**GS WUKSI** AT 400.705.274 WUESTENSOHN / RUKSI 	2021, 9 % RF A1 E	**137** *71* *new*	**135** *81* *new*	**112** *69* *new*	**106** *76* *new*	**123** *78* *new*	+1515	-0,13 +51 	-0,06 +48 	114 103 112	*70* *69* *67*	102 93 95	*65* *72* *68*	109 112 104	*78* *79* *68*	110 100 120	*72* *71* *79*	105 107	*64* *55*	103 *76*	99	100	107 105
24	**GS HARDY** AT 334.280.269 HERMELIN / RUKSI 	2019, 6 % RF A1 J	**137** *74* *0*	**128** *84* *0*	**107** *73* *+2*	**115** *78* *0*	**134** *80* *+1*	+1202	-0,04 +47 	-0,10 +34 	105 105 106	*74* *73* *71*	113 110 108	*66* *77* *70*	114 119 112	*80* *81* *69*	114 104 115	*76* *73* *82*	101 100	*67* *58*	99 *78*	99	99	121 103
25	**GS HOHENAU** AT 955.831.669 HERZPOCHEN / WOBBLER B2C	2020 A1 J	**137** *75* *-1*	**127** *85* *0*	**104** *73* *-2*	**114** *79* *-1*	**136** *81* *-3*	+1146	-0,09 +39 	-0,04 +37 	109 102 100	*74* *74* *73*	117 122 108	*67* *77* *71*	107 108 109	*81* *80* *70*	106 106 125	*76* *74* *83*	97 102	*68* *59*	112 *80*	108	103	125 112
26	**GS MYDREAM** AT 849.695.769 GS MYDARLING / GS DER BESTE 	2020 A1 J	**137** *72* *-1*	**126** *82* *0*	**102** *73* *-1*	**121** *77* *-1*	**136** *79* *-2*	+1442	-0,27 +35 	-0,16 +37 	97 103 103	*75* *71* *70*	127 107 106	*66* *73* *68*	105 108 103	*78* *79* *70*	102 106 123	*73* *72* *81*	114 97	*65* *57*	103 *78*	93	110	122 102
27	**HEFTY** AT 840.009.569 GS HIERHER / HURLY 	2020, 6 % RF A1 E	**137** *72* *-2*	**125** *82* *-2*	**115** *73* *-1*	**119** *77* *0*	**132** *79* *-1*	+1012	-0,09 +34 	-0,01 +35 	103 121 106	*73* *72* *71*	107 104 106	*66* *73* *69*	110 114 113	*78* *79* *68*	110 105 102	*73* *70* *81*	119 101	*65* *56*	108 *77*	91	103	104 101
28	**GS DEFACTO** AT 953.502.538 GS DER BESTE / MINT F5C	2018 A1 J	**137** *79* *-1*	**123** *86* *-2*	**112** *83* *+1*	**115** *84* *-3*	**134** *85* *-2*	+1004	-0,06 +37 	-0,06 +30 	118 112 102	*84* *81* *81*	117 100 106	*73* *79* *74*	111 102 103	*84* *99* *93*	107 109 120	*79* *84* *86*	108 1 92	*74* 66	110 *83*	97	110	126 102
29	**GS MY BEST Pp*** AT 781.642.769 GS MYSTERIUM Pp* / GS DER BESTE 	2019 A1 J	**137** *72* *+1*	**123** *81* *0*	**106** *73* *+3*	**125** *77* *0*	**136** *79* *-1*	+1177	-0,23 +28 	-0,07 +35 	106 109 99	*74* *74* *71*	122 104 107	*66* *73* *68*	110 117 117	*78* *79* *70*	111 107 91	*72* *73* *80*	118 106	*65* *56*	109 *76*	98	115	114 102
30	**ZACHARIUS** AT 878.232.668 GS ZICKZACK / REUMUT 	2018 Eu, A3 J	**136** *75* *-2*	**132** *85* *-1*	**112** *74* *+1*	**109** *79* *-2*	**128** *82* *-1*	+851	+0,29 +61 	+0,03 +33 	108 108 110	*76* *75* *73*	101 104 114	*67* *77* *71*	108 85 95	*80* *95* *78*	110 106 117	*76* *75* *83*	112 -2 100	*67* *59*	105 *79*	94	102	105 101
31	**WUNDERLING** AT 879.635.769 WEISSENSEE / HERZSCHLAG 	2019 Eu, A3, A5 J	**136** *73* *0*	**130** *82* *0*	**109** *74* *+1*	**108** *78* *+1*	**132** *80* *0*	+1158	-0,02 +46 	-0,04 +38 	111 102 109	*75* *74* *72*	117 111 112	*66* *73* *70*	113 99 102	*79* *80* *70*	115 109 120	*73* *73* *80*	87 96	*66* *56*	98 *77*	102	103	113 102
32	**WESTEN** AT 857.220.869 GS WOIWODE / WABAN 	2020, 5 % RF Eu, A3, 6 J	**136** *72* *-2*	**127** *81* *0*	**97** *73* *0*	**125** *77* *-2*	**131** *79* *0*	+1069	-0,09 +37 	+0,01 +38 	92 101 97	*73* *72* *71*	115 109 104	*66* *72* *68*	115 102 104	*78* *78* *69*	114 107 112	*72* *71* *79*	123 101	*65* *54*	94 *76*	92	101	114 105
33	**WOMBAT** AT 761.770.968 WOBBLER / GS WESER 	2018 A1 E	**136** *77* *-3*	**125** *86* *-1*	**115** *74* *0*	**116** *81* *-2*	**126** *83* *-1*	+1112	-0,21 +28 	+0,01 +40 	112 109 112	*74* *74* *73*	118 99 95	*71* *78* *76*	108 108 95	*82* *80* *70*	109 106 103	*78* *75* *83*	115 104	*71* *62*	103 *81*	95	107	105 102
34	**WEISSENBACH** AT 137.240.274 GS WOIWODE / GS WRIGLEY 	2020, 6 % RF Eu, A8, A3 J	**136** *72* *-1*	**125** *81* *-1*	**111** *72* *0*	**117** *77* *0*	**130** *79* *-1*	+774	+0,08 +39 	+0,06 +32 	103 111 108	*74* *72* *72*	115 107 103	*66* *72* *70*	111 106 106	*78* *79* *69*	110 107 111	*72* *72* *80*	108 104	*65* *55*	104 *77*	96	101	111 102
*35	**GS HELOS** AT 475.836.974 HERAKLES Pp* / HORIZONT 	2020 A1 E	**136** *71* *new*	**125** *81* *new*	**101** *70* *new*	**123** *76* *new*	**132** *78* *new*	+811	+0,01 +35 	+0,08 +36 	103 96 104	*71* *70* *68*	116 102 101	*65* *72* *66*	117 101 107	*77* *78* *69*	112 111 109	*72* *71* *79*	116 98	*64* *54*	103 *76*	100	107	122 102
36	**GS HIERHER** AT 655.295.338 GS HENDORF / REUMUT 	2017, 8 % RF A1 J	**136** *81* *-1*	**122** *87* *-3*	**111** *97* *-1*	**118** *83* *+1*	**137** *87* *-2*	+723	+0,04 +34 	+0,05 +30 	101 121 101	*97* *97* *96*	110 111 121	*72* *82* *76*	108 127 117	*84* *98* *90*	109 98 107	*80* *81* *87*	112 1 107	*73* *66*	95 *83*	89	105	106 104
37	**GS WEGA Pp*** AT 237.794.869 WEISSENSEE / MAHANGO Pp* 	2019 A1, 2, 17 J	**136** *72* *-1*	**119** *81* *-3*	**111** *75* *+1*	**124** *77* *-1*	**132** *80* *-2*	+944	-0,17 +24 	-0,05 +29 	108 110 107	*77* *75* *73*	118 115 103	*66* *73* *69*	115 102 102	*78* *89* *71*	114 111 110	*72* *74* *80*	116 4 97	*66* *77* *55*	107 *77*	102	98	110 103
38	**SPARTACUS** AT 804.610.768 SEHRGUT / HERZSCHLAG 	2019 Eu, A3, A5 J	**136** *79* *0*	**119** *86* *-1*	**105** *80* *-2*	**125** *84* *+2*	**134** *86* *-1*	+952	-0,13 +28 	-0,09 +26 	108 103 103	*80* *80* *78*	135 91 103	*74* *79* *75*	106 119 118	*83* *99* *96*	108 99 109	*78* *90* *84*	117 2 106	*75* *63*	98 *81*	96	116	121 103
39	**GS WONDERMAN** AT 956.715.769 GS WHAT ELSE / IMPERATIV 	2020 A1 J	**135** *73* *-2*	**129** *82* *-2*	**107** *74* *+1*	**111** *77* *0*	**133** *79* *-3*	+1189	-0,03 +46 	-0,08 +35 	100 112 102	*74* *74* *72*	112 103 111	*66* *73* *69*	97 118 117	*78* *79* *70*	94 102 121	*73* *73* *81*	107 96	*65* *55*	99 *77*	99	111	107 105
40	**ENRICO** AT 216.735.269 GS ENJO / HERZSCHLAG 	2018 Eu, A3 J	**135** *77* *0*	**127** *86* *+1*	**112** *77* *-3*	**113** *81* *+2*	**128** *83* *0*	+1127	-0,08 +40 	-0,04 +36 	114 103 112	*78* *76* *74*	110 104 105	*69* *79* *71*	105 101 98	*82* *96* *82*	107 111 114	*78* *78* *85*	112 1 110	*70* *63*	110 *82*	109	103	105 101
41	**GS WUHUDLER** AT 267.174.169 WABAN / MANIGO 	2018 A1, 2, 17 J	**135** *78* *-2*	**127** *86* *-1*	**102** *77* *0*	**118** *82* *0*	**133** *85* *0*	+1245	-0,19 +34 	-0,05 +40 	98 100 104	*77* *78* *75*	125 122 117	*73* *78* *76*	120 97 99	*83* *98* *88*	122 103 105	*78* *82* *83*	95 0 94	*72* *63*	107 *81*	108	110	109 104
42	**GS WALDSTAR** AT 505.119.869 WEISSENSEE / MAHANGO Pp* 	2019 A1 J	**135** *73* *-2*	**125** *82* *-1*	**102** *74* *0*	**119** *78* *-1*	**129** *80* *-1*	+1117	-0,18 +31 	-0,02 +37 	104 100 104	*75* *74* *73*	122 110 103	*67* *74* *70*	116 104 106	*79* *79* *70*	115 108 110	*73* *74* *81*	102 103	*67* *57*	97 *78*	104	102	107 100

New bulls are orange-coloured

Toplist by Total Merit Index – Genomic young bulls

Rg	Identification data Name ID Sire / Dam's sire Genet. def.	YoB, Foreign Al Center Availability	Partial breeding values TMI *Si* *Diff*	MI *Si* *Diff*	BI *Si* *Diff*	FIT *Si* *Diff*	TOI *Si* *Diff*	Milk Mkg	F% Fkg	P% Pkg	Beef NDG CARC TRC		Fitness Long Pers Perf		UdH CLV p VIT		SCC CLF m Msp		FEI Bef MiBe		Conformation FR *Re*	MU	FL	UD Add
43	**MARIUS** AT 629.902.169 MANAUS / MAHANGO Pp* J	2020 Eu, A3	**135** *73* *-1*	**122** *82* *-2*	**113** *73* *+2*	**115** *78* *-1*	**130** *80* *-2*	+1082	-0,13 +33	-0,12 +28	113 107 111	*74* *73* *72*	118 105 100	*67* *74* *70*	103 104 109	*79* *80* *71*	104 106 122	*74* *74* *81*	109 97	*66* *57*	106 *78*	120	110	109 108
44	**GS HAYDN** AT 052.174.174 HERZPOCHEN / WALK F5C	2020 A1 J	**135** *75* *+2*	**120** *85* *+1*	**119** *74* *0*	**115** *79* *+1*	**130** *81* *+2*	+908	-0,09 +30	-0,07 +26	121 113 112	*75* *74* *73*	110 112 103	*67* *78* *70*	109 103 103	*81* *79* *70*	109 106 118	*77* *74* *83*	110 98	*68* *60*	98 *80*	111	99	108 106
45	**GS WHIRLPOOL** AT 418.797.669 GS WOIWODE / ETOSCHA J	2019 A1	**135** *72* *-2*	**117** *81* *-2*	**111** *73* *0*	**130** *77* *0*	**130** *79* *0*	+984	-0,24 +19	-0,09 +27	107 110 107	*74* *73* *72*	121 103 98	*66* *72* *69*	127 106 102	*78* *79* *70*	131 105 98	*72* *72* *79*	122 106	*65* *55*	106 *76*	93	104	113 102
46	**MALTE Pp*** DE 09 55298697 GS MYSTERIUM Pp* / RALDI J	2020, 8 % RF 17, A1, 2	**135** *71* *0*	**116** *81* *-1*	**116** *74* *+4*	**128** *77* *-1*	**135** *79* *-1*	+855	-0,11 +26	-0,11 +21	116 111 110	*76* *72* *71*	118 100 114	*65* *72* *69*	114 105 99	*78* *80* *69*	113 108 102	*72* *72* *79*	132 108	*65* *54*	102 *75*	117	113	108 106
47	**MAHARI Pp* AT 237.411.469** GS MAHATMA Pp* / RALDI J	2019, 6 % RF Eu, A3, 6	**135** *77* *-2*	**116** *86* *-4*	**116** *76* *0*	**124** *80* *+2*	**132** *83* *-2*	+391	+0,11 +25	+0,08 +20	109 112 115	*77* *77* *74*	125 108 102	*67* *78* *71*	118 111 106	*82* *98* *84*	118 109 99	*78* *79* *84*	110 -1 102	*68* *60*	89 *81*	114	102	113 106
*48	**ERICH** AT 204.292.774 EDELSTEIN / VESUV J	2020 Eu, A3	**135** *72* *new*	**115** *82* *new*	**112** *72* *new*	**129** *77* *new*	**136** *79* *new*	+484	-0,01 +19	+0,06 +22	105 118 103	*73* *72* *72*	123 109 101	*66* *73* *70*	120 102 104	*78* *80* *69*	119 110 100	*73* *72* *80*	121 100	*65* *56*	101 *77*	104	123	119 108
49	**ILDEFONSO Pp*** AT 300.883.969 IRREGUT P*S / MAHANGO Pp* J	2019 Eu, A8, 6	**134** *76* *+1*	**135** *86* *+1*	**100** *73* *-2*	**104** *80* *0*	**122** *82* *+4*	+1349	+0,03 +59	-0,07 +41	111 91 104	*75* *74* *73*	103 100 101	*69* *78* *74*	105 104 105	*82* *82* *71*	105 111 114	*78* *74* *84*	99 3 101	*69* *61*	107 *80*	101	106	97 106
*50	**HERZBOMBE** AT 517.769.874 HERZKLOPFEN / GS DER BESTE J	2020 Eu, A8, A5	**134** *72* *new*	**131** *82* *new*	**109** *69* *new*	**104** *77* *new*	**129** *79* *new*	+1444	-0,12 +49	-0,14 +38	104 109 105	*71* *70* *68*	107 103 101	*66* *73* *69*	98 102 104	*78* *80* *70*	93 118 125	*73* *72* *81*	98 100	*65* *57*	107 *78*	105	101	123 106
51	**WAKANDA** AT 936.322.969 WEISSENSEE / HERZSCHLAG J	2020 Eu, A5, A3	**134** *72* *-2*	**131** *81* *-2*	**103** *73* *-1*	**108** *77* *+1*	**126** *79* *-2*	+1318	-0,08 +47	-0,07 +41	109 98 104	*74* *73* *72*	114 109 103	*66* *72* *69*	108 100 101	*78* *80* *70*	109 104 121	*72* *73* *80*	94 105	*66* *56*	109 *77*	96	97	114 101
*52	**MEVERIK Pp*** AT 413.191.874 MERCEDES Pp* / HERZSCHLAG J, J, N	2020 Eu, A3, A5	**134** *72* *new*	**128** *81* *new*	**110** *70* *new*	**108** *77* *new*	**125** *79* *new*	+1162	-0,06 +43	-0,06 +36	111 107 106	*71* *70* *68*	117 90 91	*66* *73* *68*	109 110 105	*78* *78* *70*	107 107 115	*72* *72* *80*	97 104	*65* *53*	102 *76*	95	104	126 96
53	**GS MOJOS** AT 278.283.669 MORALIS / HERZSCHLAG J	2019 A1	**134** *73* *-2*	**128** *83* *-4*	**101** *73* *0*	**113** *77* *+1*	**131** *80* *-3*	+1242	-0,14 +39	-0,04 +41	103 97 103	*75* *74* *72*	120 116 110	*65* *75* *70*	104 103 112	*79* *89* *72*	100 105 113	*74* *72* *81*	95 101	*65* *55*	99 *77*	95	99	116 107
54	**GS MALDI** AT 010.241.374 MANAUS / RALDI J	2020, 6 % RF A1	**134** *72* *+1*	**126** *81* *-1*	**116** *72* *+3*	**108** *77* *-1*	**131** *79* *0*	+968	+0,07 +46	-0,06 +29	118 113 109	*73* *73* *71*	111 93 111	*66* *73* *69*	105 111 103	*78* *80* *70*	105 105 122	*73* *73* *80*	105 97	*66* *55*	103 *77*	102	107	113 102
55	**GS WIWALDI** AT 601.755.369 GS WOIWODE / MAHANGO Pp* J	2019, 5 % RF A1	**134** *72* *-3*	**124** *81* *-1*	**95** *73* *-3*	**126** *77* *-1*	**132** *79* *-3*	+1108	-0,15 +33	-0,06 +34	93 94 99	*73* *72* *71*	123 113 108	*66* *72* *69*	121 108 101	*78* *78* *69*	121 101 112	*72* *72* *79*	114 101	*65* *55*	102 *76*	99	113	111 101
56	**MEMBRAN P*S** AT 869.819.869 MAJESTAET PP* / HERZSCHLAG J	2020 Eu, A3	**134** *74* *0*	**123** *83* *-1*	**107** *74* *-1*	**117** *78* *+2*	**129** *81* *+3*	+939	-0,03 +37	-0,06 +28	109 100 108	*75* *75* *73*	117 96 98	*67* *75* *71*	115 114 121	*80* *81* *71*	118 110 102	*75* *74* *82*	103 102	*67* *58*	102 *79*	101	103	116 101
57	**GS WABANGO** AT 885.925.968 WABAN / MAHANGO Pp* J	2018 A1	**134** *78* *0*	**123** *86* *0*	**98** *75* *-1*	**121** *83* *0*	**126** *85* *0*	+961	-0,10 +31	-0,01 +33	101 98 98	*76* *76* *74*	117 113 105	*73* *79* *76*	120 97 97	*83* *97* *84*	120 113 112	*79* *79* *85*	110 0 108	*73* *66*	109 *83*	104	96	100 101
58	**EGELSEE** AT 804.795.369 EDELSTEIN / HUTERA J	2020 Eu, A8, A3	**134** *74* *0*	**122** *83* *-2*	**110** *74* *+3*	**117** *78* *0*	**131** *80* *+1*	+1007	-0,10 +33	-0,08 +29	109 112 103	*75* *74* *72*	120 102 96	*67* *74* *71*	118 116 109	*79* *79* *71*	114 98 106	*74* *73* *81*	102 107	*67* *57*	107 *78*	103	108	135 105
59	**GS WICKI** AT 812.003.969 GS W1 / VARTA J	2020, 5 % RF A1	**134** *74* *-2*	**122** *84* *-4*	**107** *73* *+1*	**119** *78* *0*	**131** *80* *-3*	+1063	-0,20 +27	-0,03 +35	102 110 103	*75* *74* *73*	115 103 112	*67* *76* *70*	114 97 105	*80* *79* *70*	114 108 115	*75* *73* *83*	113 97	*66* *58*	99 *79*	105	98	109 102
*60	**GS HANDSOME** AT 403.027.774 HERZFEUER / VOLLENDET E	2020 A1	**134** *72* *new*	**121** *82* *new*	**109** *69* *new*	**118** *77* *new*	**129** *79* *new*	+560	+0,18 +38	+0,03 +23	118 103 106	*71* *70* *68*	113 94 104	*66* *73* *68*	123 109 107	*78* *80* *69*	121 104 116	*73* *71* *81*	108 104	*65* *58*	113 *78*	99	106	118 105
*61	**WEIX** AT 147.794.474 WEITBLICK / JANDA J	2020 Eu, A3	**134** *73* *new*	**120** *83* *new*	**116** *73* *new*	**120** *78* *new*	**129** *80* *new*	+917	-0,14 +26	-0,03 +30	113 115 108	*73* *72* *71*	117 103 101	*66* *75* *71*	117 92 92	*79* *80* *70*	115 112 98	*74* *73* *80*	116 103	*66* *56*	119 *78*	99	100	118 108
62	**GS ELGAR** AT 186.907.569 GS EZECHIEL / RALDI J	2019, 8 % RF A1	**134** *71* *-1*	**118** *82* *-2*	**110** *71* *-1*	**123** *75* *-1*	**135** *78* *-1*	+709	+0,01 +31	-0,03 +22	110 107 108	*72* *72* *70*	111 115 113	*64* *73* *69*	108 115 113	*77* *79* *65*	111 107 108	*72* *68* *80*	121 105	*63* *54*	109 *76*	119	101	110 102
63	**EISENHUT** AT 921.271.838 ETOSCHA / GS WOHLTAT J, J, N	2017 Eu, A8, A3	**134** *79* *+1*	**113** *86* *0*	**118** *90* *+4*	**126** *82* *-1*	**133** *85* *-2*	+623	-0,18 +11	+0,03 +24	117 111 115	*91* *91* *89*	114 109 105	*73* *78* *76*	120 106 111	*83* *98* *88*	123 110 89	*78* *80* *84*	119 0 99	*72* *64*	109 *81*	115	112	109 103

New bulls are orange-coloured

WINTERTRAUM

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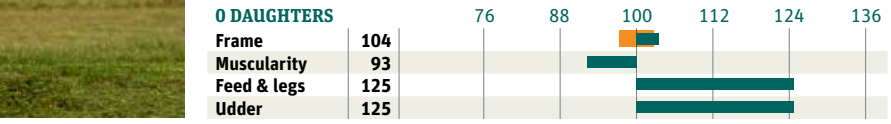
AT 989.327.769 **Breeder:** Stückler Martin Peter Dipl.-Ing.
GENOSTAR 9461 Prebl

Breeding Value: gTMI 142 (72) | BI 107 (75) | FIT 135 (77) | TOI 146 (79)
MI 121 (81) +1,137 -0.26 +24 -0.07 +34

DESCENT		
GS WOIWODE AT 934.843.838 TMI: 132 / 115 / +751 -0.18 -0.03	**WOBBLER** DE 09 46673832	**WATNOX**
	LAUSSA AT 711.596.529	**RALDI**
ZALLI – ET AT 653.590.368 TMI: 136 / 120 / +1,072 -0.17 -0.11	**GS DER BESTE** AT 514.740.229	**DAX**
	ZEDER – ET AT 924.788.222 3/3 - 10,824-3.89-3.30-779	**HURLY**

CONFORMATION 104 – 93 – 125 – 125 (76)



GS DELUXE

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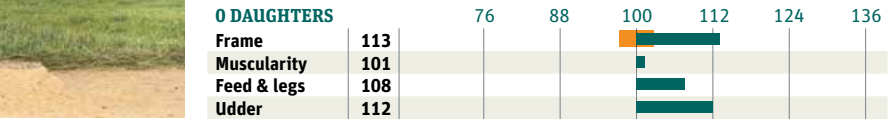
AT 104.570.274 **Breeder:** Stuphann Manfred
GENOSTAR 3202 Grünau

Breeding Value: gTMI 141 (73) | BI 115 (71) | FIT 110 (78) | TOI 132 (80)
MI 135 (82) +1,155 +0.09 +56 +0.02 +4

DESCENT		
GS DEFACTO AT 953.502.538 TMI: 137 / 123 / +1,004 -0.06 -0.06	**GS DER BESTE** AT 514.740.229	**DAX**
	BENNI AT 424.482.829	**MINT**
SANDRA AT 587.544.938 TMI: 128 / 122 / +638 +0.10 +0.08 3/2 - 9,715-4.83-3.78-836 HL: 2. - 10,218-5.07-3.84-910	**HERZSCHLAG** AT 303.304.428	**HUTERA**
	STEFFI AT 844.389.419 4/3 - 11,111-4.26-3.87-904	**GS MG**

CONFORMATION 113 – 101 – 108 – 112 (78)



GS WESTCOAST

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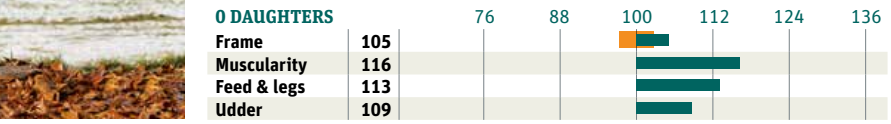
AT 382.306.974 **Breeder:** Spath Johann u. Elisabeth
GENOSTAR 8151 Hitzendorf

Breeding Value: gTMI 141 (71) | BI 119 (69) | FIT 111 (76) | TOI 133 (78)
MI 132 (81) +1,280 -0.07 +46 -0.01 +44

DESCENT		
WUESTENSOHN DE 09 53631006 TMI: 137 / 124 / +1,076 -0.14 -0.04	**WORLDCUP** DE 09 51373137	**GS WERTVOLL**
	FLORIDA DE 09 52110996	**RALDI**
LEONARDA AT 446.600.568 TMI: 128 / 121 / +704 +0.07 -0.01 1/1 - 9,028-4.06-3.73-703 HL: 1. - 9,028-4.06-3.73-703	**HERZSCHLAG** AT 303.304.428	**HUTERA**
	LAVENDL AT 764.909.722 6/4 - 9,197-3.94-3.38-673	**ROYAL**

CONFORMATION 105 – 116 – 113 – 109 (76)



MEDIAN

© KeLeKi

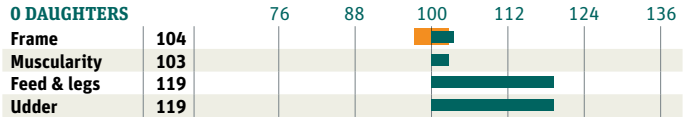
AT 201.692.574
OÖ Besamungsstation

Breeder: Rittberger Jürgen, Mayrhofer
4722 Peuerbach

Breeding Value: gTMI 139 (72) | BI 115 (73) | FIT 114 (77) | TOI 137 (79)
MI 127 (81) +1,414 -0.28 +33 -0.10 +41

DESCENT					
GS MYSTERIUM Pp* AT 903.294.838 TMI: 126 / 114 / +750 -0.15 -0.06		**MANOLO Pp*** DE 09 48496774		**MANIGO**	
		LAURA AT 353.515.528		**WATT**	
WERENA AT 422.807.468 TMI: 129 / 123 / +1,111 -0.18 -0.04 2/1 - 7,050-4.15-3.22-520 HL: 1. - 7,050-4.15-3.22-520		**VILLEROY** DE 09 47673487		**REUMUT**	
		WUSCHL AT 876.207.228 5/4 - 9,769-4.04-3.32-720		**GS PANDORA**	

CONFORMATION 104 – 103 – 119 – 119 (77)



SUPERBOY

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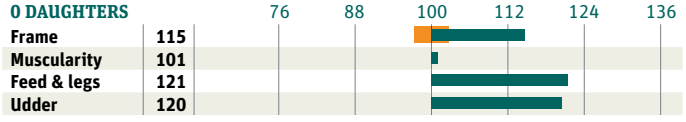
AT 462.742.874
OÖ Besamungsstation

Breeder: Grenzlandmilchhof Gmbh & Co.K
8225 Pöllau

Breeding Value: gTMI 139 (70) | BI 109 (68) | FIT 123 (75) | TOI 138 (77)
MI 126 (81) +789 +0.09 +41 +0.05 +32

DESCENT					
SPARTACUS AT 804.610.768 TMI: 136 / 119 / +952 -0.13 -0.09		**SEHRGUT** DE 09 47357352		**SERANO**	
		KRONE AT 883.244.329		**HERZSCHLAG**	
SABRINA AT 788.296.368 TMI: 133 / 123 / +719 +0.09 +0.03 200 d. 5,871-4.35-3.57-465		**ZAZU** AT 265.588.938		**ZEPTER**	
		SUSI AT 169.842.438 3/3 - 10,180-4.38-3.54-806		**VAENOMENAL**	

CONFORMATION 115 – 101 – 121 – 120 (75)



HORAZIO P*S

© KeLeKi

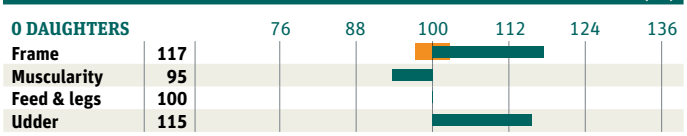
AT 226.832.169
OÖ Besamungsstation

Breeder: Schmidseder Karin und Alois
4761 Enzenkirchen

Breeding Value: gTMI 139 (76) | BI 106 (74) | FIT 123 (80) | TOI 132 (82)
MI 125 (86) +798 +0.09 +41 +0.02 +30

DESCENT					
HILFINGER DE 08 16589529 TMI: 130 / 125 / +1,082 -0.10 -0.02		**HURLY** DE 09 47424346		**HULKOR**	
		SAMBA DE 08 15491101		**WILLE**	
INKA 55 Pp* AT 624.889.638 TMI: 129 / 118 / +475 +0.16 +0.03 3/2 - 9,314-5.06-3.86-831 HL: 2. - 10,262-5.12-3.90-926		**MAHANGO Pp*** DE 09 48097266		**MUNGO Pp**	
		IDA 19 Pp* AT 085.456.629 5/4 - 10,217-4.63-3.80-861		**WITAM P*S**	

CONFORMATION 117 – 95 – 100 – 115 (80)



Legend of the toplist

IDENTITY DATA

Rg	Rank sorted according to TMI, MI, BI, FIT (all descending)
Name	Name
ID	Identification's number
Sire / Dam's sire	Sire / Dam's sire
YoB	Year of birth
Foreign	Breed with any foreign gene share
Genetic def.	Genetic defects with 3 digit code:
Digit 1–2	Abbreviations for genetic defects (B2 – Brown Swiss haplotype 2, F2 – Growth defect/Short stature, F5 – Fleckvieh haplotype 5, TP – Thrombopathy)
Digit 3	„C" for „heterozygous carrier" (Carrier), „S" for „homozygous carrier" (Sure)
AI Center	Insemination centre, which are in the (co-) owning of the bull: A1 = GENOSTAR A3 = Hohenzell, OÖ A5 = Samendepotstelle Rotholz, Tirol A7 = Klessheim, Salzburg A8 = Perkohof, Kärnten A9 = Samenvertretung Vorarlberg AV = Vöcklabruck, OÖ Eu = EUROgenetik 2 = Greifenberg 3 = Höchstädt 6 = Neustadt a. d. Aisch 7 = Memmingen 9 = Marktredwitz-Wölsau 10 = Bayern-Genetik 16 = Bauer, Wasserburg 17 = CRV Meggle 26 = ZBH Alsfeld 27 = RBW C1 = CRV (CZ) C2 = Jihocesky chovatel (CZ) C3 = Plemko (CZ) C4 = Plemo (CZ) C5 = CHD Impuls (CZ) C6 = Reprogen (CZ) C7 = Natural (CZ)
Availability	Availability of semen in relation to the owning stations (J=yes, E=restricted; V=available, but curretly no distribution, N=no), if the availability is the same for all stations, it will be expressed only once, otherwise, in the appropriate order

PARTIAL BREEDING VALUES

TMI	Total merit index
MI	Milk index
BI	Beef index
FIT	Fitness index
TOI	Total organic index
Re	Reliability
Diff	Difference to the last breeding value estimation

MILK/CONFORMATION

Mkg, F%, P%, Fkg, Pkg	Breeding values for milk yield, fat and protein content, fat and protein yield
Ext-Dau	Number of described daughters
FR-MU-FL-UD-(Add)	Breeding values for frame, muscularity, feet&legs, udder, udder cleanness

BEEF

CCI	Breeding value for commercial cross
NDG	Breeding value for net daily gain
CARC	Breeding value for carcass percentage
TRC	Breeding value for EUROP trade class

FITNESS

Long	Breeding value for longevity
Pers	Breeding value for persistency
Perf	Breeding value for performance increase
MSp	Breeding value for milking speed (average kg/min)
UDH	Breeding value for udder health
FEI	Breeding value for fertility
CLV p/m	Breeding value for direct and maternal calving ease
VIT	Breeding value for calf vitality
SCC	Breeding value for somatic cell count
Fert	Breeding value for fertility in %
MiBe	Breeding value for milking behavior
Mas	Breeding value for mastitis
EFD	Breeding value for early fertility disorders
Cyst	Breeding value for ovarian cysts
MiFe	Breeding value for milk fever

ABSOLUTE PERFORMANCES INDICATORS

Int-Dau	Number of daughters in international milk breeding value estimation
Farm	Numbers of farms, where the daughters are being bred
in 1.L, in 2.L, in 3.L	Number of daughters in the milk evaluation in the 1st, 2nd and 3rd lactation
MP 1, MP 2, MP 3	Average number of test days of daughters in the 1st, 2nd and 3rd lactation
D100, D1, D2, D3	Number of daughters with completed 100-day performance, 1st, 2nd and 3rd lactation
Mkg, F%, P%, F+P	Average milk yield, fat and protein content, fat and protein yield of the daughters
ØHd	Herd average in which the daughters are kept
Mat.	Mating level expressed as MI average of daughter's dams

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NATIONAL FLECKVIEH EXHIBITION
FREISTADT – AUSTRIA
03. – 04. September 2022

FREISTADT – Raiffeisen Fleckvieh Arena

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- FleckScore World Cup
- Elite auction
- National Fleckvieh Exhibition, and the best specimens of Austria

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BUNDES **FLECKVIEH SCHAU** '22
FREISTADT
03.–04.09.2022

FLECKVIEH AUSTRIA | geneticAUSTRIA | Raiffeisen | Bundesministerium Landwirtschaft, Regionen und Tourismus