

TOTAL MERIT INDEX GZW

General

Breeds: Fleckvieh, Brown Swiss, Pinzgauer, Grauvieh, Gelbvieh, Vorderwälder

since 1998 total merit index

since 2002 together with Germany, since 2016 together with the Czech Republic (Fleckvieh).

Objective: Maximisation of the total economic benefit (economic total merit index) considering the expected selection responses

Implementation: ZuchtData Vienna

Methodology

- with index method (Miesenberger, 1997, adapted) from the EBV for the individual traits
- consideration of the economic weights, the genetic relationships and the individual reliabilities.

Genetic correlations in the total merit index GZW:

	Fkg	Ekg	E%	NTZ	AUS	HKL	ND	PER	FRW	KVM	VIW	EGW	MBK
Fkg													
Ekg	0,75												
E%	-0,10	-0,05											
NTZ	0,00	0,10	0,00										
AUS	-0,15	-0,15	0,00	0,50									
HKL	-0,20	-0,15	0,00	0,45	0,55								
ND	-0,25	-0,25	-0,10	-0,10	0,15								
PER	-0,15	-0,15	0,00	-0,10	-0,10	-0,10	0,50						
FRW	-0,40	-0,40	0,00	-0,10	-0,05	-0,10	0,50	0,20					
KVM	0,10	0,10	0,00	0,00	-0,05	-0,10	0,15	0,00	0,40				
VIW	0,10	0,10	0,00	0,00	0,00	-0,10	0,20	0,00	0,10	0,10			
EGW	-0,25	-0,25	0,00	0,00	0,00	-0,10	0,50	0,30	0,10	0,00	0,10		
MBK	0,35	0,35	0,00	0,00	-0,10	-0,10	0,00	-0,10	-0,10	0,00	0,00	-0,20	

Economic weights

Economic weights per genetic standard deviation (in %) in total merit index GZW (Holstein: RZG):

	Trait	Fleckvieh		Brown Swiss		Holstein		Pinzgauer		Grauvieh	
Milk	Fat yield	18.6	38	20.7	50	*	36	17	36	9	20
	Protein yield	19.4		27.8		*		19		11	
	Protein content			1.5		*					
Meat	Net daily gain	4	18	3	5		0	7	14	12.5	25
	Dressing perc.	7		1							
	Trade class	7		1				7		12.5	
Fitness	Longevity	10	44	12	45	18	49	18	50	18	55
	Persistency	3		3				2		7	
	Fertility FRW	14		15		3		12		10	
	Calving ease direct					3		1		1	
	Calving ease mat.	1		1				1		2	
	Calf vitality VIW	5		4		3		3		4	
	Udder health EGW	10		10		18 [#]		10		11	
	Milking speed	1						3		2	
Conform.						15	15				

* Holstein: Milk index (RZM) = 100 + 0,24*EBV Fat-kg + 0,48*EBV Protein-kg, # RZ Gesund (health)

Publication

Total merit index GZW as relative breeding value with mean 100 and deviation 12 (Brown Swiss: deviation 15!)

Selection response

Expected selection response with exclusive selection according to GZW for Fleckvieh and Brown Swiss (for milk traits in natural units (kg or %), for all other traits in breeding value points per generation):

	Fleckvieh	Brown Swiss
MILK	70%	90%
MEAT	10%	0%
FITNESS	20%	10%
Milk-kg	325	371
Fat-kg	13	14,6
Protein-kg	10	12,1
Protein-%		-0,013
Net daily gain	3	1
Dressing percentage	2	-1
Trade class	1	-3
Longevity	4	2
Persistency	2	2
Fertility FRW	0	-1
Calving ease direct	0	0
Calving ease maternal	4	4
Calf vitality VIW	4	4
Udder health EGW	2	1
Milking speed	3	4

Genetic trends

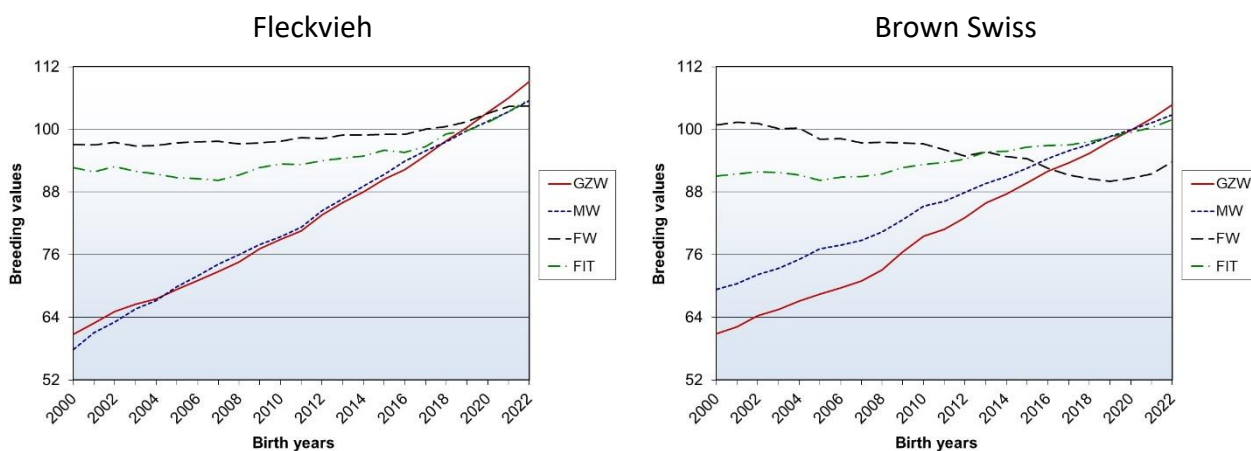


Fig.: Genetic trends for the total merit index GZW (GZW deviation Brown Swiss: 15), the milk index MW, the meat index FW and the fitness index FIT for the cows (Austria).

Ecological index ÖZW

The ecological index (ÖZW) is an index that is intended to take special account of the objectives and framework conditions of organic farming and is not an official breeding value. Since 2017, the ÖZW has been published as additional breeding value information.

Economic weights per genetic standard deviation (in %) in the ecological index ÖZW.

	Fleckvieh	Brown Swiss
MILK	20	25
MEAT	15	10
FITNESS	56	56
CONFORMATION	9	9
Fat-kg	9,8	11,8
Protein-kg	10,2	13,2
Net daily gain	3	2
Dressing percentage	6	4
Trade class	6	4
Longevity	11	11
Persistency	5,6	5,6
Yield improvement	8,4	8,4
Fertility FRW	9	9
Calving ease direct	3	3
Calving ease maternal	6	6
Calf vitality VIW	6	6
Udder health EGW	5	5
Milking speed	2	2
Hoof height	1	1
Feet & legs	3	3
Udder	5	5