# ZUCHTWERT AUSTRIA



# **Genetic evaluation CONFORMATION**

#### General

Breeds: Fleckvieh, Brown Swiss, Pinzgauer, Grauvieh, Gelbvieh, Vorderwälder Holstein: see www.vit.de since 1998 genetic evaluation for conformation traits since 2000 together with Germany, since 2019 single-step evaluation Implementation: LfL Grub

#### Data

Randomly selected or (area-wise) all first parity cows are linearly described, measured and evaluated. All first parity cows from the herd genotyping projects are also described. Fleckvieh: Fleckscore (www.fleckscore.com)

Brown Swiss: Brownscore (www.brownscore.com)

Countries: Austria, Germany, Czech Republic (Fleckvieh), Italy (Fleckvieh).

Traits:

- 4 main scores, for Brown Swiss additionally overall score
- up to 25 individual traits
- deficiencies/special features

#### Model

univariate BLUP animal model (Grauvieh: blockwise multivariate), single-step Software MiX99

#### Effects:

- Classifier-year
- Year-Season
- Herd-year (partly herd classes)
- Age at first calving
- Distance to calving
- Distance from milking
- Genetic effect of the cow

Additional correction for heterogeneous variances between classifiers

#### **Genetic parameters**

#### Heritabilities (%) for main scores:

	Fleckvieh, Pinzgauer, Gelbvieh	Brown Swiss	Grauvieh 55	
Frame	44	39		
Muscling <sup>1</sup>	21	14	33 27	
Feet & Legs <sup>2</sup>	11	14		
Udder	24	34	43	
Overall score		29		
<sup>1</sup> Brown Swiss: Pelv	is <sup>2</sup> Grauvieh: Shape			

Swiss: Pelvis <sup>2</sup> Grau



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## **Publication**

as relative breeding values with mean 100 and deviation 12

partly traits with intermediate optimum

usually published as a bar chart (see example from

zuchtwert.at), optimum ranges are marked

CONFORMATION						0 daughters: 100 - 103 - 112 - 129 (79		
		76	88	100	112	124	136	
Frame	100							
Muscularity	103			-				
Feet & Legs	112							
Udder	129			-	_	_		
Cross height	104	small					large	
Body length	101	short					long	
Hip width	96	narrow					wido	
Body depth	95	shallow		-			deep	
Pelvic angle	91	ascending					descending	
Hock angularity	92	straight					sickled	
Hock development	111	swollen					dry	
Pastorns	102	weak		-			strong	
Hoof height	108	low					high	
Fore udder length	101	short					long	
Rear udder length	104	short					long	
Fore udder attachment	113	loose					tight	
Central ligament	112	weak					strong	
Udder depth	118	deep					high	
Teat length	88	short	-				long	
Teat thickness	89	thin	-				thick	
Front teat placement	118	wide			-		close	
Rear teat placement	118	wide					close	
Rear teat direction	120	outwards			_	-	inwards	
Additional teats	105	add, teats		-			clean	

# Relationship between breeding value and phenotype

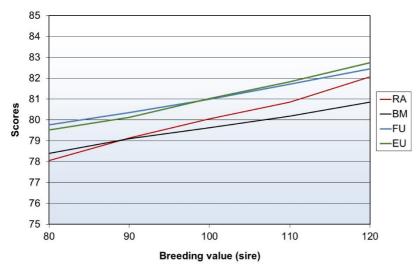


Fig.: Average scores for the main traits frame (RA), muscling (BM), feet & legs (FU) and udder (EU) depending on the respective breeding value of the sire (Fleckvieh, Austria)

## **Genetic trends**

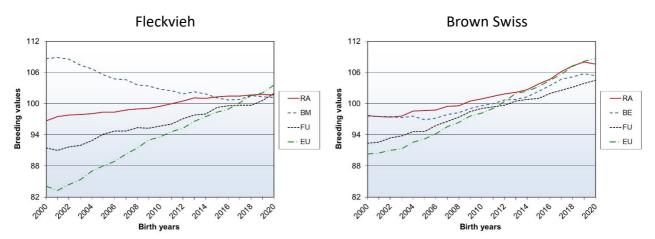


Fig.: Genetic trends for the trait complexes frame (RA), muscling (BM, Fleckvieh), pelvis (BE, Brown Swiss), feet & legs (FU) and udder (EU) for the cows (Austria).

