

## Genetic evaluation CLAW HEALTH

### General

Breeds: Fleckvieh and Brown Swiss

since Dec. 2023 single-step evaluation together with Germany and Czech Republic

Implementation: ZuchtData Vienna

### Data

Claw trimming data of professional claw trimmers and farmers since 2017

Veterinarian claw diagnoses since 2006

Countries: Austria, Germany

### Traits:

- **Claw trimming data:** Digital dermatitis (DD), Interdigital hyperplasia (IH), White line fissure (WL), Claw ulcer (CU), Heel horn erosion (HE), Laminitis (LA) and other findings (OF)
- **Veterinarian diagnoses:** all claw diagnoses (VET)

### Auxiliary traits:

- Disposal due to claw and feet & leg problems (DIS)
- Frame (FR) and feet & legs (F&L)

Genetic correlations to claw health index KGW:

Trait	Fleckvieh	Brown Swiss
<b>Culling claw</b>	0.68	0.61
<b>Frame</b>	-0.17	-0.28
<b>Feet &amp; legs</b>	0.17	0.11

### Model

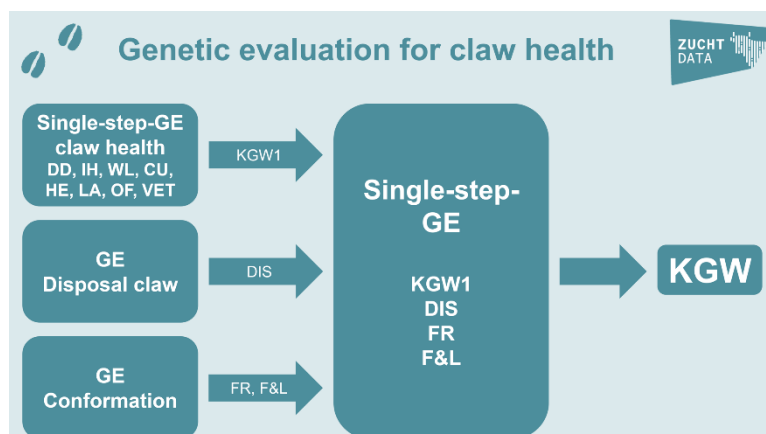
multistep procedure (see Figure)

multivariate BLUP animal model

(single-step), software MiX99

### Effects:

- region-year-month
- parity-calving age
- parity-stage of lactation
- person-recording type-year
- herd and herd-year-month
- permanent environment
- genetic effect of the cow



### Genetic parameters

Heritabilities and economic weights to calculate the claw health index KGW.

Traits	Heritabilities (%)		Weights (%)
	Fleckvieh	Brown Swiss	
Digital dermatitis	4.8	8.5	20
Interdigital hyperplasia	9.1	5.9	5
White line fissure	3.7	6.4	15
Claw ulcer	4.0	6.6	15
Heel horn erosion	6.6	9.0	5
Laminitis	2.1	4.2	10
Other findings	3.0	3.8	10
Veterinarian diagnoses	1.5	1.9	20
<b>KGW</b>	<b>6.3</b>	<b>10.6</b>	

**Publication**

**Claw health index KGW (weights see table)**

as relative breeding value with mean value 100 and deviation 12

the higher the KGW the lower the claw trimmer findings and veterinarian diagnoses

**Relationship between breeding value and phenotype**

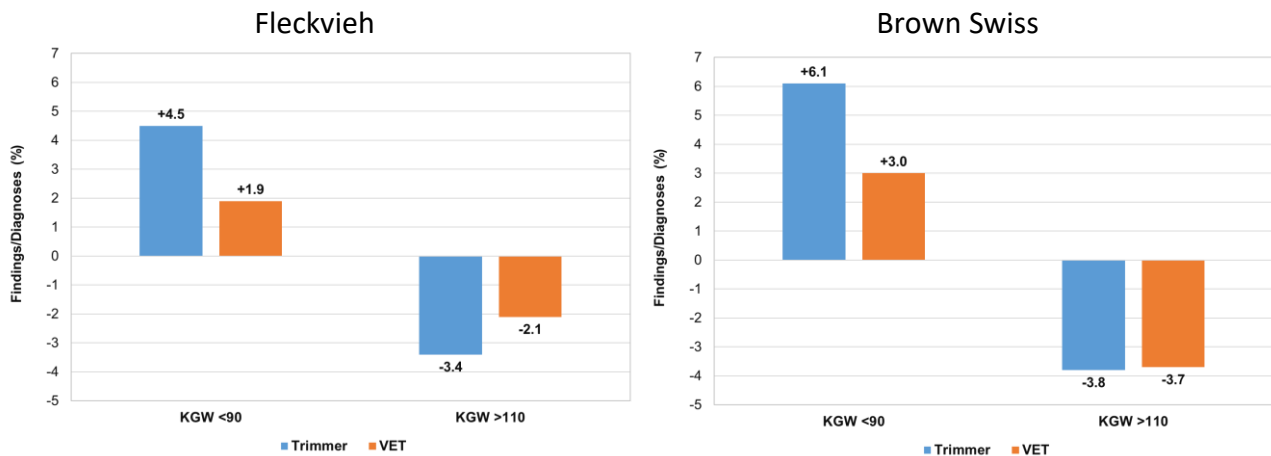


Fig.: Incidence rates for claw trimmer findings and veterinarian claw diagnoses as difference to the mean depending on claw health index KGW.

**Genetic trends**

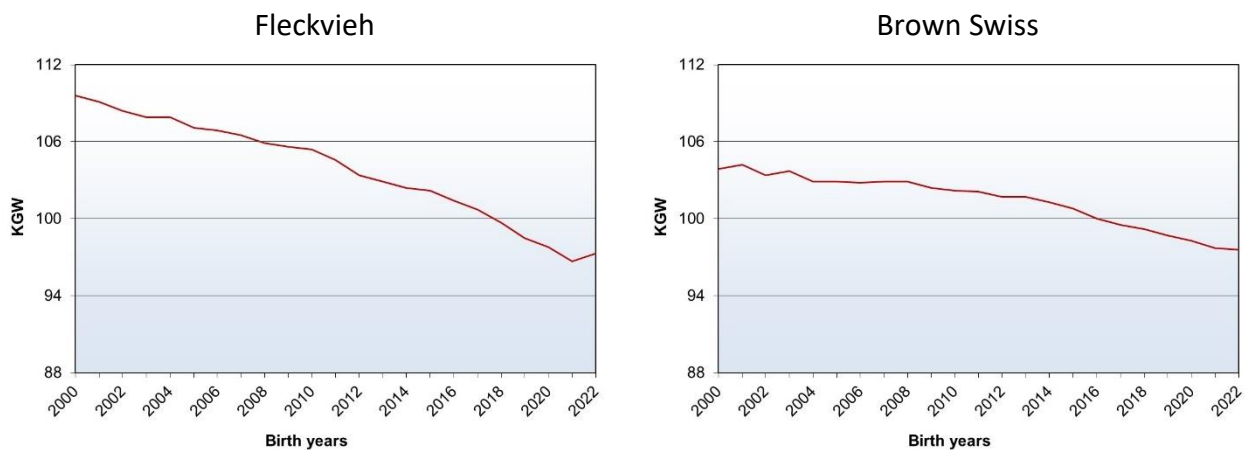


Fig.: Genetic trends for the claw health index KGW for cows.