

## 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

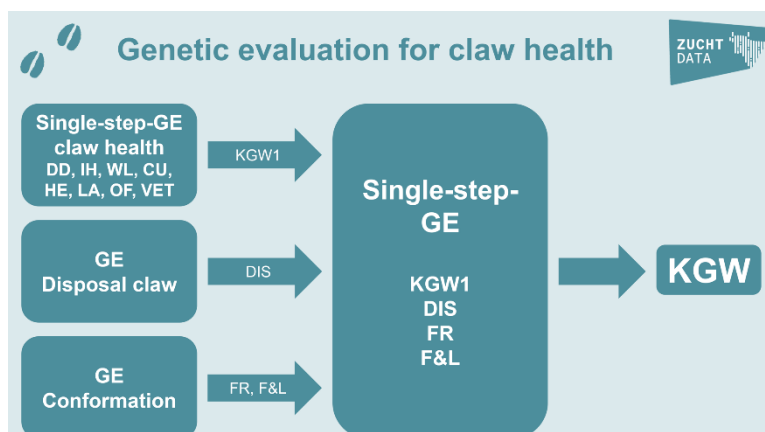
multistep procedure (see Figure)

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

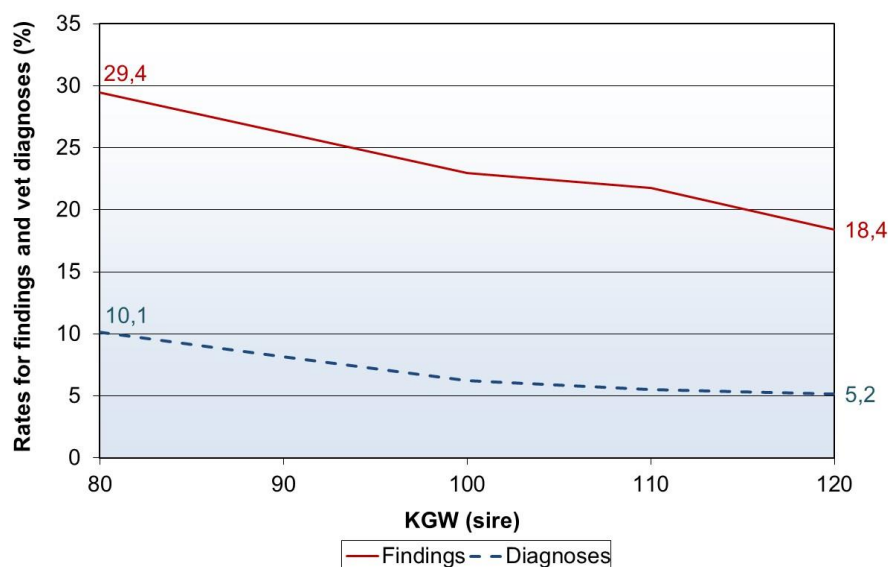


Fig.: Incidence rates for claw trimmer findings and veterinarian claw diagnoses depending on claw health index KGW.

## Genetic trends

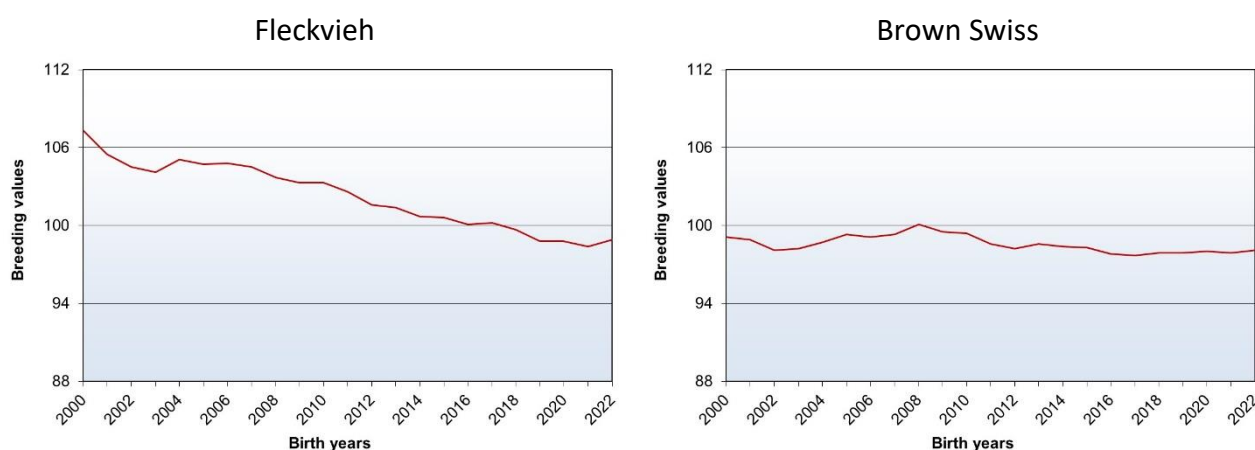


Fig.: Genetic trends for the claw health index KGW for the cows (Austria).