

Genetic evaluation MASTITIS and MILK FEVER

General

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

since 2010 genetic evaluation health for Fleckvieh, since 2013 for Brown Swiss, since 2021 for the other breeds

since 2010 together with Germany, since 2021 single-step evaluation (not for milk fever)

Implementation: ZuchtData Vienna

Data

Veterinary diagnoses and farmer-based observations near birth since 2006

Countries: Austria, Germany

Traits:

- Mastitis: acute and chronic mastitis
-10 to 150 days after calving, additional losses due to udder disease
- Milk fever: parturient paresis, recumbency
-10 to 10 days after calving, additional losses due to metabolism

Model

univariate BLUP animal model (single-step for mastitis)

Software MiX99

Effects:

- Lactation-calving age
- calving year-calving month
- Data type (diagnoses only, diagnoses+observations, observations only) - Recording type (performance recording, electronic, ...) - Year
- Herd-calving year
- permanent environment of the cow
- genetic effect of the cow

Genetic parameters

Heritabilities (%):

Breed	Mastitis	Milk fever
Fleckvieh, Pinzgauer, Grauvieh, Vorderwälder	2.0	3.6
Brown Swiss	3.0	1.7

Publication

Breeding value **mastitis (MAS)** and breeding value **milk fever (MIF)** as relative breeding values with mean value 100 and deviation 12

Udder health index EGW: Index of breeding value somatic cell count (70% weight) and breeding value mastitis (30% weight) with the auxiliary traits fore udder attachment, udder depth and front teat placement.

the higher the breeding value, the fewer diagnoses.

Relationship between breeding value and phenotype

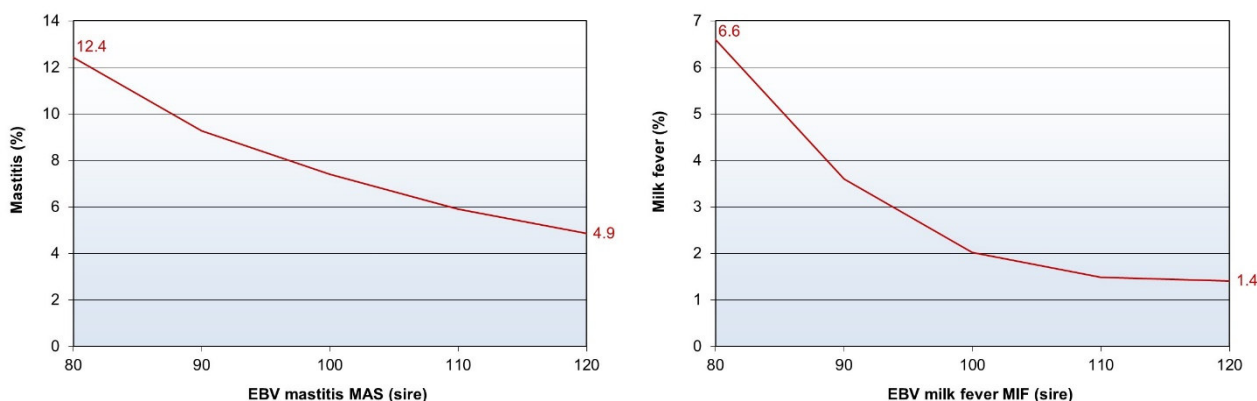


Fig.: Average percentage of cows with diagnoses for mastitis or milk fever depending on the breeding value for mastitis (MAS) or breeding values for milk fever (MIF) of the sire (Fleckvieh, Austria)

Genetic trends

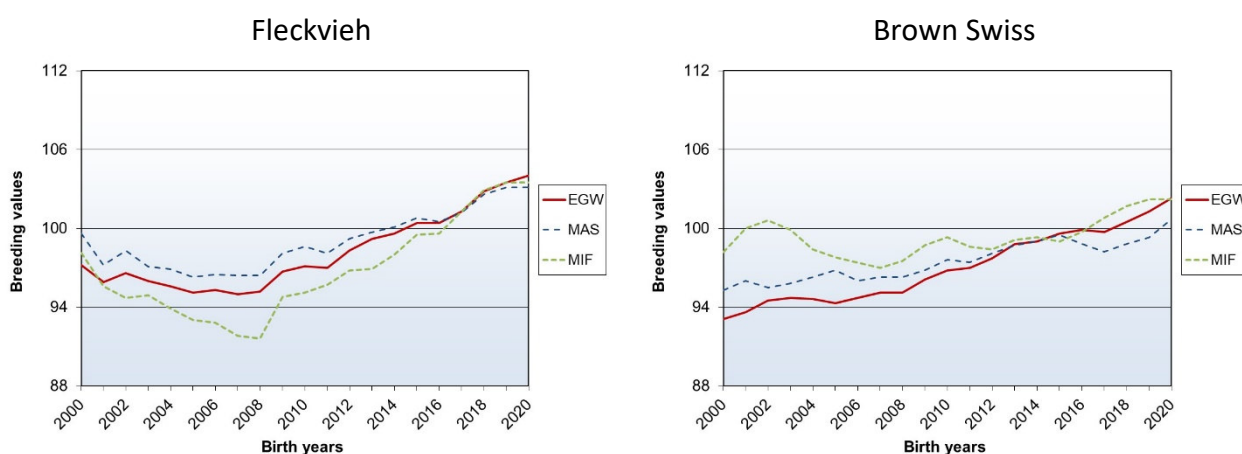


Fig.: Genetic trends for the udder health index EGW and the breeding values for mastitis (MAS) and milk fever (MIF) for the cows (Austria)