

Status as of: July 2019

Form BEEF

DESCRIPTION OF BEEF NATIONAL GENETIC EVALUATION SYSTEM

Country (or countries) Switzerland

Trait name: Weaning weight

DATA COLLECTION

Breed(s)	Angus, Aubrac, Braunvieh, Charolais, Limousin, Simmental
Trait definition	Effective weaning weight Birth weight (auxiliary trait)
Method and frequency of measurement	One weaning weighing with a scale occurs between 90 and 320 days. Calves with 2 weaning weighings get their second weight used for EBV.
Who does the performance recording?	Experts of Swiss Beef Cattle
Method of collecting data	The weaning weight is recorded by Swiss Beef Cattle in the database.
Which animals get recorded?	Purebred animals registered by Swiss Beef Cattle
Is birthday recorded?	Yes
Is day of recording available?	Yes
Are the data adjusted and/or selected? If yes please describe the methodology applied	No
Time period for inclusion of records	Since 1990
Criteria (data edits) for inclusion of records	10 kg > birth weight < 80 kg 0.3 kg/day < daily gain < 2.5 kg/day 90 <= weaning age in days <= 320 birth and weaning weight available birth and weaning herds available dam and her age by calving available alp grazing information available Number observation per breed > 2500 Number observation per herd > 10 Number observation per herd*year > 5

Is embryo transfer applied? How are ET animals been identified? ¹ Is recipient mother ID recorded?	The technique is rarely applied. The performance data of ET animals are included. ET is appended to the animal's name. The recipient mother ID is recorded.
How do you treat incomplete data?	If an animal didn't have an effective weaning weight, then this animal is deleted.

MODEL

Model used for genetic evaluation ^{2a}	2 traits multivariate BLUP animal model with direct and maternal effects across breeds. Maternal effect is only for weaning weight.
Environmental effects ^{2b}	(F) : sex, year*month, alpine farming ¹ . (R) : herd*year, animal, permanent environment ¹ , dam ¹ , residual. Covariate: animal age ¹ , dam age, linear and quadratic. ¹ only for weaning weight
Use of genetic groups and relationships	genetic group for birth year, country, breed, selection path.
Genetic parameters in the model ³	Appendix I BEEF
Adjustment for heterogeneous variance in evaluation model	No
System validation	Several data quality checks by Qualitas and Swiss beef cattle at different stages of the procedure, correlation among the previous and the current evaluation.
Definition of genetic reference base Next base change	Rolling base includes sires aged of 3 to 8 years old prior to current evaluation. Adjusted every year.
Assessment of index quality (computation of reliability, connection)	Reliabilities are computed by apax99s.

PUBLICATION

Expression of genetic evaluations	For direct genetic effect, the weaning weight direct is called AGD and for maternal genetic effect, the weaning weight maternal is called AGM. EBV standardized using $[\text{Raw EBV} - \text{Base}] / (\sigma) * 12 + 100,$ where σ is the genetic standard deviation and Base is the breeding value's mean of the rolling base.
Criteria per official publication of evaluations	EBVs are publishable for all animals included in the evaluation that belong to the breeds mentioned above.
Number of evaluations / publications per year	2
Anticipated changes in the near future	
Key reference on methodology applied	

Key organization:
Contact person, address, phone,
fax,
e-mail, website

Evaluation Center:
Qualitas AG
Chamerstrasse 56, CH-6300 Zug, Switzerland
Phone: +41 (0)41 768 92 60
e-mail: sophie.kunz@qualitasag.ch
Internet: <http://www.qualitasag.ch>

EBV's published by herdbook organisation:
Swiss Beef Cattle
Stapferstrasse 2, CH-5201 Brugg
Phone: +41 (0)56 462 33 54
e-mail: svenja.strasser@mutterkuh.ch
<http://mutterkuh.ch/en/>

- 1) Use Appendix II BEEF for sample ID of ET animals
- 2a) Use abbreviation listed in the attached list of abbreviation to define the type of model.
- 2b) Use abbreviation for most common effects as listed in the attached list of abbreviation indicating, also, if the effect is treated as random (R) or fixed (F).
- 3) Use Appendix I BEEF for heritability/genetic variance estimates.

Parameters used in genetic evaluation

Country:

Main trait group:

Breed: 2

Trait ⁽¹⁾	Definition	hd ²	hm ²	rg(d,m)	c ²	σ _p ²
WW	Weaning weight	0.31	0.08	-0.25		
BW	Birth weight	0.33				

hd² : direct heritability; hm² : maternal heritability; rg(d,m): genetic correlation between direct and maternal effects; c²: repeatability of (maternal) permanent environmental effects; σ_p²: phenotypic variance.

1) If you have more than one trait provide the correlations between traits.

GG = Birth weight

AGD = Weaning weight direct

AGM = Weaning weight maternal

h ² diagonal, r _g offdiagonal	GG	AGD	AGM
GG	0.33	0.43	0.12
AGD		0.31	-0.25
AGM			0.08

