

STATUS AS OF: April 2020

Form BEEF

DESCRIPTION OF BEEF NATIONAL GENETIC EVALUATION SYSTEM

Country (or countries): Slovenia

Trait group: Calving (Birth Weight and Calving Ease)

DATA COLLECTION

Breed(s)	Limousin, Charolais
Trait definition	Birth Weight (BW) = birth weight of calf Calving ease (CE) = requirements of assisting cow during calving process
Method and frequency of measurement	BW: Weighting of animals in recorded herds. Unit is kg. CE: Calving ease is scored from 1 to 5 (1: easy calving, 5: embryotomy)
Who does the performance recording?	BW & CE: Breeders
Method of collecting data	BW: Calves are weighted at birth. CE: Calving ease is scored after calving. BW & CE: Data are sent to national recording organization by breeders.
Which animals get recorded?	BW: Calves born at the farming facility. CE: Cows calving at the farming facility.
Is birthday recorded?	BW & CE: Yes
Is day of recording available?	BW: Yes, but it is not considered CE: Yes
Are the data adjusted and/or selected? If yes please describe the methodology applied	BW: No. CE: Scores 4 and 5 are joined in the evaluation. Score is homogenized within year of calving and national recording organization regional subsidiary.
Time period for inclusion of records	BW: Recording from 01.01.1995 CE: Recording from 01.01.2004
Criteria (data edits) for inclusion of records	BW: The weight is between 30-65 kg. Known related information (own and dam ID, gender, birth date, general data, weighting location), age of calf between 0-2 days, minimum 4 animals in herd. CE: Maximum parity = 10. Age at 1st parity is 18-48 months. Known related information (dam ID, calf gender, calving date, birth date of dam, general data, calving location).

Is embryo transfer applied? How are ET animals been identified? Is recipient mother ID recorded?	BW & CE: ET is rarely used. Identification is provided according to ICAR rules. Donor is used as mother. Recipient mother is recorded.
How do you treat incomplete data?	BW & CE: Excluded
MODEL	
Model used for genetic evaluation^{2a}	BW & CE: ST-BLUP-AM multibreed model with BREED as a fixed effect, and DAM. After evaluation results are split and published by breed.
Environmental effects^{2b}	BW: F: BREED, YEAR, CSEX, PARI class R: HERD-YEAR CE: F: BREED, SEAS-YEAR, PARI-CSEX-AACA R: HERD-YEAR
Use of genetic groups and relationships	BW & CE: Relationship matrix without genetic groups
Genetic parameters in the model³	BW & CE: σ^2_p , h^2_d , h^2_m , c^2 , e^2 , $r_{g(d,m)}$ c^2 = proportion of common herd within birth year (BW)/year of calving (CE) in environmental variance
Adjustment for heterogeneous variance in evaluation model	BW & CE: No
System validation	BW & CE: Comparison of subsequent evaluation results (breeding value correlation, rank correlation)
Definition of genetic reference base Next base change	BW & CE: Population average of both breeds. The base is updated each evaluation.
Assessment of index quality (computation of reliability, connection)	BW & CE: Computation of reliability.
PUBLICATION	
Expression of genetic evaluations	BW & CE: Standardized and expressed as $N(\mu=100, \sigma=12)$ $BV12 = ((BV-a)/b) * 12 + 100$ a-mean of BV b-standard deviation of BV BW: Published direct and maternal effect CE: Published direct effect for males

Criteria per official publication of evaluations	BW: Reliability ≥ 0.3 CE: Reliability ≥ 0.12 (males); ≥ 0.25 (females)
Number of evaluations / publications per year	BW & CE: 3
Anticipated changes in the near future	
Key reference on methodology applied	Web site: http://rodica.bf.uni-lj.si/govedo
Key organization: Contact person, address, phone, fax, e-mail, website	University of Ljubljana, Biotechnical Faculty Department of Animal Science Groblje 3 1230 Domzale Slovenija E-mail: Klemen.Potocnik@bf.uni-lj.si Tel.: +386 1 3203 872 Fax: +386 1 7241 005 E-mail: barbara.lustrek@bf.uni-lj.si Tel.: +386 1 3203 886 Fax: +386 1 7241 005

- ¹Use 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). ³Use Appendix I BEEF for heritability/genetic variance estimates.

Form BEEF

Appendix I BEEF Parameters used in national genetic evaluation Country: Slovenia

Main trait group: Calving

Breed: Limousin, Charolais

Trait ⁽¹⁾	Definition	h_d^2	h_m^2	$r_{g(d,m)}$	c^2	σ_p^2
Birth Weight		0.39	0.15	-0.49	0.21	29.18
Calving Ease		0.10	0.02	-0.51	0.38	0.30

