

STATUS AS OF *April 2021*

Form BEEF

DESCRIPTION OF BEEF NATIONAL GENETIC EVALUATION SYSTEM

Country (or countries): Estonia

Trait group: Weaning weight

DATA COLLECTION

Breed(s)	Charolais, Limousine, Aberdeen Angus, Simmental, Blonde d'Aquitaine, Hereford, Highland Cattle
Trait definition	Adjusted weaning weight (200 days)
Method and frequency of measurement	Weights of all male and female animals are recorded 2 times. Weaning performance: 200 +/- 50 days; Yearling performance: 365 +/- 45 days;
Who does the performance recording?	Weighting can be done by breeders.
Method of collecting data	Performance data is collected on farm
Which animals get recorded?	Pure breed
Is birthday recorded?	Yes
Is day of recording available?	Yes
Are the data adjusted and/or selected? If yes please describe the methodology applied	$AWW=200*(ww-bw)/(days\ between\ ww\ and\ bw)+bw$
Time period for inclusion of records	Since 1999

Criteria (data edits) for inclusion of records	Only purebred animals from 1999, with known sire and dam and known birth weight between 20kg and 75kg, weaning weight between age 150-250 days and aww between 100kg and 550kg, daily gain between 300g and 3000g.
Is embryo transfer applied? How are ET animals been identified?¹ Is recipient mother ID recorded?	No
How do you treat incomplete data?	Records without yearling weight are allowed
MODEL	
Model used for genetic evaluation^{2a}	Single trait animal model
Environmental effects^{2b}	Breed(F), herd* birthyear(F), season(F), parity of dam (F), sex*twin(F), birthyear(F)
Use of genetic groups and relationships	Genetic groups are defined separately for Estonian versus foreign ancestry according to breed, sex and year of birth of the animal
Genetic parameters in the model³	See Appendix I BEEF
Adjustment for heterogeneous variance in evaluation model	No
System validation	checks on data quality (raw data, pedigree information, etc.) checks on results: checks in EBV between evaluations

Definition of genetic reference base	EBV: animals with weight of birth and weaning weight born in 2015
Next base change	RBV: bulls by breed (with at least 10 descendants and accuracy \geq 50%) born since 2005 EBV: September 2025 -> animals born in 2020
Assessment of index quality (computation of reliability, connection)	Reliabilities are calculated using K. Meyers method for multitrait models (1989)
PUBLICATION	
Expression of genetic evaluations	RBV (100/12) AWW (200 days)
Criteria per official publication of evaluations	At least 10 progenies and accuracy \geq 50%
Number of evaluations / publications per year	2 (February, September)
Anticipated changes in the near future	None
Key reference on methodology applied	
Key organization: Contact person, address, phone, fax, e-mail, website	Eesti Põllumajandusloomade Jõudluskontrolli AS Mart Uba 12 F. Tuglase Str. 50094 Tartu phone: +372 7 387 731 gsm: +372 52 16 524 mart.uba@epj.ee

<http://www.epj.ee>

- 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:

Main trait group: Weaning weight

Breed(s): Charolais, Limousine, Aberdeen Angus, Simmental, Blonde d'Aquitaine, Hereford, Highland Cattle

Trait ⁽¹⁾	Definition	h_d^2	h_m^2	$r_{g(d,m)}$	c^2	σ_p^2
AWW		0.51				631.4

- h_d^2 : direct heritability; h_m^2 : maternal heritability; $r_{g(d,m)}$: genetic correlation between direct and maternal effects; c^2 : repeatability of (maternal) permanent environmental effects; σ_p^2 : phenotypic variance. ¹If you have more than one trait (e.g. AWW at 120d and 210d) provide the correlations between traits.

Form BEEF

Appendix II BEEF Sample of ET animal IDs Country:

Main trait group:

Breed:

ET animal ID
