

DESCRIPTION OF NATIONAL GENETIC EVALUATION SYSTEMS

Country (or countries)	BELGIUM (Walloon Region)
Main trait group¹	Longevity
NOTE! Only one trait group per form!	
Breed(s)	Red and Black Holstein
Trait definition(s) and unit(s) of measurement²	Survival over successive lactations
Attach an appendix if needed	
Method of measuring and collecting data	Milk recording
Time period for data inclusion	Lactation since 1973 (included)
Age groups (e.g. parities) included	All parities
Other criteria (data edits) for inclusion of records	Age checks for all lactations. Cows need to have a known first lactation. Herd has at least one test-day record in the year following the calving year, if not current survival put to censored record.
Criteria for extension of records (if applicable)	No extension
Sire categories	All sires
Environmental effects³, pre-adjustments	No preadjustments
Method (model) of genetic evaluation³	Random regression lactation survival animal model
Environmental effects³ in the genetic evaluation model	Herd – quota year – lactation class (1 st , 2 nd , 3 rd , 4 th and later) (F) Birthyear – lactation class (1 st , 2 nd , 3 rd , 4 th and later) (F)
Adjustment for heterogeneous variance in evaluation model	No adjustments
Use of genetic groups and relationships	Yes, genetics groups based on selection path, type of breed, degree of Holsteinisation, origin (North-America vs Europe) and time
Blending of foreign/Interbull information in evaluation	No blending
Genetic parameters in the evaluation	Use Appendix GE for heritability/genetic variance estimates; for multiple-trait genetic evaluations, provide genetic correlation estimates between traits separately. Use also appendices PR, CO, BCO, SM, LO, CA, as applicable, if you participate in the international genetic evaluations of Interbull
System validation	Trend validations
Expression of genetic evaluations	Cumulative survival over first 5 lactations, expressed in lactations
If standardised (e.g. RBV), give standardisation formula in the appendix	
Definition of genetic reference base	Cows born in 2000 and having survival records records
Next base change	In 2010

Calculation of reliability	Based on INTERBULL EDC computations
Criteria for official publication of evaluations	First sire need to have production evaluation REL \geq 60 % imported sires if domestic results REL \geq 35 % young sires or imported sires with INTERBULL results
Number of evaluations / publications per year	4
Use in total merit index⁴	Not yet
Anticipated changes in the near future	Combined longevity
Key reference on methodology applied	

Key organisation: name, address, phone, fax, e-mail, web site Organisation responsible for genetic evaluations:
Association Wallonne de l'Élevage Asbl (AWE)
4, rue des Champs Elysées
B-5590 Ciney

Computing center:
Animal Science Unit
Gembloux Agricultural University
Passage des Déportés, 2
B-5030 Gembloux
Belgium

Phone: + 32/81/622206
Fax: + 32/81/622115
E-mail : gengler.n@fsagx.ac.be

WEB site for publication of sire breeding values:

<http://www.elinfo.be>

1) Either: Production (e.g. milk, fat, protein), Conformation, Health (e.g. mastitis resistance, milk somatic cell, resistance to diseases other than mastitis), Longevity, Calving (e.g. stillbirth, calving ease), Female fertility (e.g. non-return rate, interval between reproductive events, number of AI's, heat strength), Workability (e.g. milking speed, temperament), Beef production, Efficiency (e.g. body weight, energy balance, body conditioning score), or Other traits.

2) Indicate frequencies per category if the trait is categorical and specify transformation of data if practiced.

3) Use abbreviations for most common effects (see document with list of abbreviations at http://www-interbull.slu.se/service_documentation/General/list_of_abbreviations.rtf) and indicate random (R) or fixed (F).

4) Please give economic weights and indicate how they are expressed (preferably in genetic standard deviation units).

Parameters for national genetic evaluations for longevity traits as provided to Interbull

Country (or countries): BELGIUM (Walloon Region)
Main trait group: Longevity
Breed(s): Holstein

Trait	h^2	Genetic Variance	official proof standardisation formula ^a
Direct longevity:	0.106	0.0797	
Combined longevity:			

^a Expressed as follows:
 $StandEval = ((eval - a) / b) * c + d$ where a=mean of the base adjustment, b=standard deviation of the base, c=standard deviation of expression (include sign if scale is reversed), and d=base of expression.

Table 1 : Genetic correlations and genetic variances (on diagonal) across selected lactations (1 to 7, 10 and 17).

	1	2	3	4	5	6	7	10	17
1	0.00232	0.850	0.972	0.858	0.694	0.604	0.561	0.525	0.523
2	0.850	0.00354	0.900	0.514	0.251	0.129	0.074	0.029	0.026
3	0.872	0.900	0.00386	0.835	0.645	0.545	0.497	0.458	0.455
4	0.858	0.514	0.835	0.00496	0.959	0.917	0.893	0.871	0.870
5	0.694	0.251	0.645	0.959	0.00650	0.992	0.984	0.975	0.974
6	0.604	0.129	0.545	0.917	0.992	0.00650	0.998	0.995	0.995
7	0.561	0.074	0.497	0.893	0.984	0.998	0.00650	0.999	0.999
10	0.525	0.029	0.458	0.871	0.975	0.995	0.999	0.00650	0.999
17	0.523	0.026	0.455	0.870	0.874	0.995	0.999	0.999	0.00650

Table 2 : Residual correlations and residual variances (on diagonal) across selected lactations (1 to 7, 10 and 17).

	1	2	3	4	5	6	7	10	17
1	0.0751	0	0	0	0	0	0	0	0
2	0	0.115	0	0	0	0	0	0	0
3	0	0	0.125	0	0	0	0	0	0
4	0	0	0	0.149	0	0	0	0	0
5	0	0	0	0	0.210	0	0	0	0
6	0	0	0	0	0	0.210	0	0	0
7	0	0	0	0	0	0	0.210	0	0
10	0	0	0	0	0	0	0	0.210	0
17	0	0	0	0	0	0	0	0	0.210