

Introduction

The latest routine international evaluation for longevity trait took place as scheduled at the Interbull Centre. Data from twenty two (22) populations were included in this evaluation.

International genetic evaluations for direct longevity trait of bulls from Australia, Belgium, Canada, Switzerland, Germany, Denmark-Finland-Sweden Spain, France, The United Kingdom, Ireland, Israel, Italy, New Zealand, The Netherlands, The United States of America, Hungary, Norway, Slovenia, Czech Republic, Japan and Uruguay were computed. Brown Swiss, Guernsey, Holstein, Jersey, Red Dairy Cattle and Simmental breed data were included in this evaluation.

Changes in national procedures

Changes in the national genetic evaluation of longevity traits are as follows:

JPN (HOL)	Some changes in proofs caused by additional records and in EDCs caused by modification of pedigree.
FRA (ALL)	Base change
AUS (ALL)	Drops in information due to data clean-up such as pedigree changes, status change of a bull which leads to a good number of bulls no longer qualifying.
DEA (BSW)	Base change
CAN (ALL)	Base change
DEU (ALL)	Base change
CHE (ALL)	Base change
SVN (HOL, BSW)	Base change
ISR (HOL)	Base change, few drops in information due to data edits
ITA (HOL, JER)	Base change, HOL: drim of one year of phenotypic data.
ITA (BSW)	Base change
POL (HOL)	New organisation, CGen, replacing NIAP. New model and estimated new genetic parameters as part of a single step evaluation. New base change to be aligned with production traits. Only bulls with a minimum number of 10 herds were submitted. A new data editing pipeline has been implemented including stricter filters on herd size, contemporary group size, outliers identification, and the cows' breed causing a reduction in the number of daughters and herds for almost all the bulls in the evaluation. Applied the mtedc software for EDC calculation Changed Type Of Proof from 12 to 11 due to a new procedure for setting type of proof: The previous procedure counted daughters based on milk yield and used this information to set the bulls type of proof for all traits. Currently, the Type Of Proof is based on each trait-specific daughter count. New trait definition changing from a survival kit to an animal model. Pedigree clean-up and verification. Some animals appear to be missing in this evaluation because they were either identified as duplicate of another animal during predigree clean-up or dropped in the numbers of daughters or herds below publication criteria or there were breed inconsistency of bulls which actually were not HOL
NLD (ALL)	Base change
USA (ALL)	Base change, drops in information due to pedigree accuracy and herd-year minimum edits.
URY (HOL)	First time participating, base change
NZL (ALL)	Some drops in information, especially EDC, added a filter for which if a daughters breed didn't match a bulls breed the daughter got dropped from a bulls proof, this has affected the national herd because of the number of cross bred animals present.
HUN (HOL)	Changes in the type of proof for some bulls makes them no longer meeting the minimum requirements for inclusion.

INTERBULL CHANGES COMPARED TO THE PREVIOUS ROUTINE RUN

A new document called confdoc_DEFINITION{runid}.itb has been introduced reporting all the trait definitions applied by countries as reported in the PREP.

During 2023-2024, Interbull Centre and the Interbull Technical Committee (ITC) have worked on developing a new procedures for adjusting of the international correlations after a given test run in case countries would decide NOT TO implement the changes tested in the next routine run. Until now, the relative difference between the previous routine's and test run's correlations, for each pair of countries, was assessed and the average value of the two was used whenever such difference did exceed a threshold of 0.01. Otherwise, correlations from the latest test run were used. However, in some cases, the difference in correlations between routine/test runs were way above a 1% difference so that by using the average value the newly derived correlations would still be greatly affected by the changes tested but not implemented. This remark has been made in few occasions by some participating countries. A new approach proposed by Peter Sullivan, was developed and extensively tested. The new approach is based on first identifying the relative impact of the changes tested by a country during the test run (but not implemented in a routine run) and then correcting the whole correlation matrix detracting such estimated impact. This new approach would assure that the new correlations would be free from any effect from any changes tested but not implemented. The new procedure has been fully developed during 2023 and extensively tested during 2024 and introduced officially in the April 2025 routine evaluation.

DATA AND METHOD OF ANALYSIS

Data were national genetic evaluations of AI sampled bulls with at least 10 daughters or 10 EDC (for clinical mastitis and maternal calving traits at least 50 daughters or 50 EDC, and for direct calving traits at least 50 calvings or 50 EDC) in at least 10 herds. Table 1 presents the amount of data included in this Interbull evaluation for all breeds.

National proofs were first de-regressed within country and then analysed jointly with a linear model including the effects of evaluation country, genetic group of bull and bull merit. Heritability estimates used in both the de-regression and international evaluation were as in each country's national evaluation.

Table 2 presents the date of evaluation as supplied by each country

Estimated genetic parameters and sire standard deviations are shown in APPENDIX I and the corresponding number of common bulls are listed in APPENDIX II.

SCIENTIFIC LITERATURE

The international genetic evaluation procedure is based on international work described in the following scientific publications:

International genetic evaluation computation:
Schaeffer. 1994. J. Dairy Sci. 77:2671-2678
Klei, 1998. Interbull Bulletin 17:3-7

Verification and Genetic trend validation:
Klei et al., 2002. Interbull Bulletin 29:178-182.
Boichard et al., 1995. J. Dairy Sci. 78:431-437

Weighting factors:
Fikse and Banos, 2001. J. Dairy Sci. 84:1759-1767

De-regression:
Sigurdsson and G. Banos. 1995. Acta Agric. Scand. 45:207-219
Jairath et al. 1998. J. Dairy Sci. Vol. 81:550-562

Genetic parameter estimation:
Klei and Weigel, 1998, Interbull Bulletin 17:8-14
Sullivan, 1999. Interbull Bulletin 22:146-148

Post-processing of estimated genetic correlations:
Mark et al., 2003, Interbull Bulletin 30:126-135
Jorjani et al., 2003. J. Dairy Sci. 86:677-679
<https://wiki.interbull.org/public/rG%20procedure?action=print>

Time edits
Weigel and Banos. 1997. J. Dairy Sci. 80:3425-3430

International reliability estimation
Harris and Johnson. 1998. Interbull Bulletin 17:31-36

NEXT ROUTINE INTERNATIONAL EVALUATION

Dates for the next routine evaluation can be found on
<http://www.interbull.org/ib/servicecalendar>.

NEXT TEST INTERNATIONAL EVALUATION

Dates for the next test run can be found on
<http://www.interbull.org/ib/servicecalendar>.

From this year an extra MACE test run has been scheduled in May, data submissions' deadline and target for distribution of results are all reported in the above link.

PUBLICATION OF INTERBULL ROUTINE RUN

Results were distributed by the Interbull Centre to designated representatives in each country. The international evaluation file comprised international proofs expressed on the base and unit of each country included in the analysis. Such records readily provide more information on bull performance in various countries, thereby minimizing the need to resort to conversions.

At the same time, all recipients of Interbull results are expected to honor the agreed code of practice, decided by the Interbull Steering Committee, and only publish international evaluations on their own country scale. Evaluations expressed on another country scale are confidential and may only be used internally for research and review purposes.

PUBLICATION OF INTERBULL TEST RUN

Test evaluation results are meant for review purposes only and should not be published.

^LTable 1. National evaluation data considered in the Interbull evaluation for Longevity (April Routine Evaluation 2025).
Number of records for direct longevity by breed

Country	BSW	GUE	HOL	JER	RDC	SIM
AUS		146	8748	1854	801	
BEL			1971			
CAN	273	113	13858	897	929	
CHE	3297		3444			
CZE			5441			
DEA	5309					
DEU			24596		314	
DFS			15282	2759	9623	
ESP			4667			
EST						
FRA	513		18697			
FRM						5175
GBR	157	344	8799	956	669	107
HUN			3532			
IRL			3506	263	80	
ISR			1851			
ITA	2417		9201	69		
JPN			7337			
KOR						
LTU						
LVA						
NLD	249		16883	274	95	459
NOR					4050	
NZL			8339	4824	1071	
POL			12602			
PRT						
SVK						
SVN	324		719			548
URY			2064			
USA	1244	836	43014	5530	832	118
ZAF			1262	730	135	
HRV						
CAM					45	
No.Records	13783	1439	215813	18156	18644	6407
Pub. Proofs	10880	1174	158136	14475	16597	5963

^LAPPENDIX I. Sire standard deviations in diagonal and genetic correlations below diagonal

BSW dlo									
	CAN	CHE	DEA	NLD	USA	ITA	FRA	GBR	SVN
CAN	9.00								
CHE	0.71	10.79							
DEA	0.88	0.84	12.25						
NLD	0.67	0.75	0.72	324.39					
USA	0.90	0.65	0.85	0.74	2.64				
ITA	0.79	0.72	0.86	0.63	0.72	15.69			
FRA	0.64	0.81	0.77	0.69	0.68	0.54	0.97		
GBR	0.85	0.59	0.63	0.62	0.84	0.65	0.60	0.32	
SVN	0.70	0.68	0.83	0.74	0.75	0.73	0.68	0.59	23.35

GUE dlo				
	AUS	CAN	USA	GBR
AUS	0.06			
CAN	0.66	8.01		
USA	0.61	0.89	2.87	
GBR	0.71	0.91	0.87	0.38

HOL dlo																						
	AUS	BEL	CAN	CHE	DEU	DFS	ESP	FRA	GBR	IRL	ISR	ITA	NLD	NZL	USA	HUN	CZE	SVN	ZAF	POL	JPN	URY
AUS	0.04																					
BEL	0.70	0.38																				
CAN	0.67	0.88	7.26																			
CHE	0.75	0.77	0.82	12.25																		
DEU	0.71	0.86	0.86	0.87	12.39																	
DFS	0.72	0.84	0.86	0.79	0.91	12.17																
ESP	0.62	0.82	0.87	0.78	0.84	0.76	11.29															
FRA	0.59	0.65	0.66	0.78	0.66	0.69	0.65	0.94														
GBR	0.74	0.90	0.90	0.79	0.86	0.82	0.89	0.62	0.31													
IRL	0.63	0.85	0.78	0.65	0.75	0.69	0.76	0.44	0.80	2.12												
ISR	0.61	0.57	0.49	0.66	0.69	0.71	0.56	0.52	0.60	0.56	108.14											
ITA	0.59	0.70	0.76	0.74	0.75	0.68	0.89	0.70	0.79	0.63	0.58	6.11										
NLD	0.54	0.66	0.66	0.72	0.69	0.75	0.62	0.66	0.63	0.47	0.69	0.54	259.33									
NZL	0.68	0.66	0.68	0.71	0.73	0.69	0.54	0.47	0.67	0.65	0.47	0.49	0.47	2.23								
USA	0.67	0.85	0.88	0.80	0.89	0.88	0.86	0.68	0.84	0.72	0.69	0.76	0.74	0.60	2.20							
HUN	0.47	0.62	0.71	0.63	0.70	0.60	0.83	0.59	0.68	0.54	0.43	0.79	0.51	0.51	0.76	1.26						
CZE	0.44	0.52	0.58	0.56	0.56	0.47	0.68	0.44	0.57	0.57	0.49	0.62	0.44	0.44	0.56	0.56	19.04					
SVN	0.47	0.79	0.71	0.66	0.76	0.69	0.69	0.61	0.74	0.64	0.51	0.61	0.68	0.53	0.75	0.63	0.44	21.83				
ZAF	0.67	0.81	0.89	0.73	0.84	0.75	0.87	0.57	0.86	0.86	0.49	0.72	0.45	0.65	0.85	0.74	0.62	0.64	30.33			
POL	0.60	0.89	0.90	0.77	0.90	0.85	0.90	0.67	0.89	0.77	0.51	0.77	0.69	0.66	0.88	0.75	0.54	0.82	0.86	18.33		
JPN	0.69	0.91	0.93	0.75	0.87	0.86	0.87	0.58	0.90	0.82	0.50	0.71	0.63	0.69	0.87	0.71	0.56	0.77	0.90	0.90	1.54	
URY	0.71	0.74	0.67	0.76	0.80	0.72	0.66	0.56	0.70	0.64	0.53	0.59	0.55	0.70	0.70	0.53	0.49	0.53	0.71	0.73	0.71	2.91

JER dlo										
	AUS	CAN	DFS	NLD	NZL	USA	GBR	ZAF	IRL	ITA
AUS	0.04									
CAN	0.51	7.31								
DFS	0.74	0.66	11.99							
NLD	0.61	0.62	0.81	318.16						
NZL	0.52	0.53	0.60	0.45	1.98					
USA	0.64	0.82	0.78	0.74	0.56	2.32				
GBR	0.59	0.88	0.71	0.62	0.56	0.81	0.29			
ZAF	0.46	0.61	0.49	0.47	0.46	0.67	0.63	26.44		
IRL	0.52	0.67	0.57	0.45	0.48	0.66	0.68	0.65	1.62	
ITA	0.54	0.69	0.67	0.55	0.47	0.70	0.71	0.54	0.61	7.17

RDC dlo										
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	AUS	CAN	DEU	DFS	NZL	USA	GBR	NLD	ZAF	IRL	NOR	CAM
AUS	0.05											
CAN	0.60	7.24										
DEU	0.69	0.84	12.39									
DFS	0.67	0.76	0.90	12.98								
NZL	0.68	0.56	0.69	0.53	2.54							
USA	0.60	0.86	0.88	0.86	0.63	2.46						
GBR	0.69	0.89	0.85	0.75	0.61	0.81	0.30					
NLD	0.52	0.67	0.71	0.77	0.48	0.78	0.67	304.15				
ZAF	0.56	0.90	0.79	0.62	0.56	0.81	0.82	0.47	35.88			
IRL	0.60	0.73	0.73	0.65	0.59	0.62	0.71	0.46	0.79	1.56		
NOR	0.57	0.77	0.67	0.79	0.44	0.82	0.73	0.84	0.63	0.47	40.73	
CAM	0.54	0.71	0.79	0.78	0.50	0.83	0.71	0.79	0.64	0.57	0.66	9.28

SIM dlo

	FRM	NLD	SVN	GBR	USA
FRM	0.94				
NLD	0.62	285.37			
SVN	0.52	0.64	22.12		
GBR	0.72	0.65	0.75	0.27	
USA	0.69	0.75	0.76	0.83	1.99

^LAPPENDIX II. Number of common bulls

BSW

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DEA	NLD	USA	ITA	FRA	GBR	SVN
CAN	0	148	162	50	189	149	98	68	32
CHE	127	0	660	126	338	546	205	84	80
DEA	141	558	0	177	348	793	267	86	107
NLD	43	118	163	0	91	150	94	41	49
USA	185	315	313	80	0	266	139	98	39
ITA	133	486	701	124	193	0	243	89	101
FRA	89	163	216	79	102	205	0	71	50
GBR	66	64	58	32	94	65	59	0	19
SVN	29	74	97	49	31	93	48	14	0

GUE

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	USA	GBR
AUS	0	54	69	42
CAN	53	0	77	36
USA	66	68	0	98
GBR	37	31	99	0

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	BEL	CAN	CHE	DEU	DFS	ESP	FRA	GBR	IRL	ISR	ITA	NLD	NZL	USA	HUN	CZE	SVN	ZAF	POL	JPN	URY
AUS	0	746	1546	665	1774	1500	976	1415	1657	808	136	1168	1581	1137	2129	817	986	167	472	1228	1013	727
BEL	651	0	815	600	1222	972	720	1018	987	544	101	805	1233	463	992	582	723	165	309	874	584	354
CAN	1543	782	0	940	2676	1829	1446	1663	1994	632	182	1956	1839	682	4048	1190	1326	223	476	1774	1526	833
CHE	590	603	836	0	1234	819	612	778	860	454	79	776	1006	377	1093	476	582	140	252	768	523	331
DEU	1368	1251	2109	1164	0	3251	1742	2770	2593	995	219	2779	3850	924	3974	1486	2195	387	544	3123	1608	878
DFS	1140	927	1636	772	2649	0	1269	2002	2098	892	205	1857	2730	844	2701	1142	1624	289	513	2171	1197	757
ESP	714	703	953	508	1179	1015	0	1418	1301	571	133	1393	1319	530	1776	903	1034	201	445	1335	1020	568
FRA	1011	1021	1170	721	1737	1288	1196	0	1907	842	159	1721	2294	786	2772	1097	1522	228	504	2112	1365	673
GBR	1528	1007	2258	856	2262	1826	1118	1441	0	1224	202	1800	2318	1024	2826	1108	1452	242	541	1909	1283	833

IRL	705	534	575	461	881	757	545	710	1306	0	136	651	1031	782	936	511	644	123	335	744	524	413
ISR	86	58	113	44	165	146	75	96	162	103	0	189	213	128	315	154	177	53	72	211	153	109
ITA	951	810	1732	711	2147	1655	1062	1178	1633	584	129	0	1934	580	2862	1215	1424	287	406	2098	1263	719
NLD	1368	1365	1732	990	3670	2544	1176	1633	2264	977	160	1750	0	1009	2950	1174	1846	299	502	2352	1242	750
NZL	1100	358	619	311	677	593	388	485	926	677	97	449	894	0	1064	495	649	105	337	665	560	542
USA	2176	881	4499	1023	3120	2329	1233	1642	2809	862	309	2469	2570	996	0	1622	2066	267	634	2771	2255	1287
HUN	628	494	1082	399	1229	978	745	817	1030	448	103	1128	1010	376	1635	0	1127	179	395	1233	850	571
CZE	673	576	971	444	1785	1180	785	1062	1191	509	136	1140	1672	468	1736	1044	0	232	432	1685	1027	657
SVN	113	129	173	100	379	232	143	170	195	93	36	249	260	70	218	134	166	0	67	317	174	101
ZAF	410	263	399	212	424	389	388	387	493	294	44	330	410	265	609	314	302	48	0	414	437	319
POL	972	802	1566	655	2935	1929	1023	1581	1837	626	162	1871	2251	502	2816	1152	1460	282	313	0	1203	772
JPN	626	403	869	380	827	739	549	590	783	368	72	728	757	320	1203	524	543	98	314	729	0	663
URY	563	250	735	244	624	537	426	424	717	316	63	526	576	444	1556	445	471	53	276	626	392	0

JER

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	DFS	NLD	NZL	USA	GBR	ZAF	IRL	ITA
AUS	0	278	197	83	418	525	267	250	68	44
CAN	286	0	160	51	174	516	218	169	16	37
DFS	171	156	0	178	177	295	263	180	67	39
NLD	74	44	181	0	86	121	128	81	48	23
NZL	456	184	158	79	0	359	273	198	151	36
USA	567	532	283	125	421	0	318	329	59	49
GBR	278	223	268	127	286	367	0	204	115	46
ZAF	242	164	165	77	207	344	214	0	43	42
IRL	65	15	63	46	170	60	124	43	0	13
ITA	42	35	38	20	35	51	46	41	12	0

RDC

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	DEU	DFS	NZL	USA	GBR	NLD	ZAF	IRL	NOR	CAM
AUS	0	101	46	231	122	147	109	44	37	25	80	11
CAN	104	0	13	201	55	241	119	7	71	7	8	0
DEU	45	12	0	72	17	30	17	21	3	8	17	0
DFS	210	210	63	0	146	238	159	60	50	25	161	0
NZL	122	54	17	140	0	83	70	20	31	13	34	9
USA	149	226	28	236	84	0	159	53	62	34	88	28
GBR	108	119	16	157	68	153	0	50	51	33	87	0
NLD	43	7	20	58	20	52	49	0	2	18	52	0
ZAF	38	73	3	49	27	56	44	2	0	3	0	0
IRL	24	7	8	21	13	34	33	18	3	0	64	0
NOR	69	7	16	135	32	89	91	51	0	62	0	0
CAM	11	0	0	0	9	28	0	0	0	0	0	0

SIM

common bulls below diagonal
common three quarter sib group above diagonal

	FRM	NLD	SVN	GBR	USA
FRM	0	128	0	65	94
NLD	149	0	80	44	32
SVN	0	78	0	0	1
GBR	82	42	0	0	20
USA	109	33	1	27	0
