

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:

FRA (ALL) Base change. HOL/SIM/MON: French and Montbeliards breeding organisations have made the choice to suspend the publication of EBVs for bulls that entered progeny testing and produced daughters but were not subsequently placed on the market as public breeding bulls based on their progeny test results. As consequence, around 1000 bulls are now missing or their publication status have changed from official to unofficial

ITA (HOL, JER) Base change

IRL (ALL) Small change in information due to pedigree verification

POL (HOL) New definition of UPG groups, pedigree pruning, new genetic base, applied new coding for status and type of proof for MACE according to new recommendation from the ITB.

AUS (ALL) Decrease in information due to pedigree updates and change in status of some bulls that do not qualify for inclusion any longer.

DFS (ALL) Drops in information due to editings

DEA (BSW) Base change

CAN (ALL) Base change

ISR (HOL) Small reduction on Herds/daughters/EDC due to corrections in pedigree.

EST (HOL) Small decrease in number of EDC of some bulls having the same number of daughters/herds compare to previous evaluation due to the changed number of herd of changed location of some daughters in different dairy farms of owners

USA (ALL) Drops in herds/daughters/EDC are related to pedigree correctness and daughter-herd-year minimum edits.

DEU (ALL) Base change

CHE (ALL) Base change, drops in information due to manual edits

GBR (ALL) Base change

SVN (ALL) Base change, estimated variance components and heritability. HOL/SIM: Time period for data inclusion has been shifted forward by five years (data from 2015 to 2025 are used).

BEL (HOL) Slight drops in information due to pedigree verification.

ITA (BSW) Base change

NZL (ALL) Drops in information and reliability due to pedigree verification. Drops affecting especially EDC as they are obtained from a back calculation of reliabilities

ESP (HOL) Base change

NLD (ALL) Base change, update of genetic parameters, extra effect of inbreeding to the model, extra edit in data selection: max of 18 month of lactation is used

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.

Direct Gestation Length (ges) has been added as the fifth trait in the calving evaluation starting from the August 2025 MACE routine evaluation, and therefore added in the calv{BRD}{RUNID}.itb and calv{BRD}{RUNID}.ipr.

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
<https://interbull.org/ib/servicecalendar>

NEXT TEST INTERNATIONAL EVALUATION

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

From 2025 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 2026).
 Number of records for direct longevity by breed

Country	BSW	GUE	HOL	JER	RDC	SIM
AUS		159	9269	1875	860	
BEL			2022			
CAN	280	115	14124	922	943	
CHE	3348		3523			
CZE			5573			
DEA	5407					
DEU			25033		320	
DFS			15621	2795	9695	
ESP			4881			
EST						
FRA	525		18910			
FRM						5272
GBR	158	348	9086	983	685	107
HUN			3646			
IRL			3739	276	86	
ISR			1946			
ITA	2476		9075	69		
JPN			7498			
KOR						
LTU						
LVA						
NLD	262		17201	287	99	472
NOR					4102	
NZL			8612	4964	1100	
POL			13760			
PRT						
SVK						
SVN	338		654			463
URY			2133			
USA	1271	851	43827	5712	858	125
ZAF			1265	738	136	

No. Records	14065	1473	221398	18621	18930	6439
Pub. Proofs	11021	1194	158593	14734	16755	4787

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

BSW dlo

	CAN	CHE	DEA	NLD	USA	ITA	FRA	GBR	SVN
CAN	9.62								
CHE	0.73	10.81							
DEA	0.89	0.84	12.23						
NLD	0.67	0.74	0.75	289.25					
USA	0.90	0.66	0.85	0.74	2.62				
ITA	0.80	0.73	0.86	0.65	0.72	15.79			
FRA	0.65	0.81	0.77	0.69	0.67	0.55	0.97		
GBR	0.85	0.61	0.67	0.61	0.84	0.64	0.61	0.32	
SVN	0.71	0.68	0.83	0.71	0.77	0.69	0.63	0.61	23.99

GUE dlo

	AUS	CAN	USA	GBR
AUS	0.47			
CAN	0.86	8.26		
USA	0.84	0.89	2.86	
GBR	0.89	0.92	0.88	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	0.34																					
BEL	0.82	0.38																				
CAN	0.80	0.88	7.38																			
CHE	0.84	0.78	0.82	12.07																		
DEU	0.85	0.86	0.86	0.87	12.35																	
DFS	0.82	0.84	0.86	0.79	0.91	12.13																
ESP	0.75	0.83	0.88	0.79	0.84	0.76	11.12															
FRA	0.65	0.65	0.66	0.78	0.66	0.69	0.65	0.93														
GBR	0.86	0.91	0.90	0.80	0.86	0.82	0.89	0.62	0.31													
IRL	0.72	0.85	0.77	0.65	0.74	0.68	0.78	0.44	0.81	2.10												
ISR	0.65	0.55	0.48	0.59	0.69	0.70	0.55	0.47	0.57	0.54	109.90											
ITA	0.71	0.70	0.76	0.75	0.75	0.68	0.89	0.70	0.79	0.63	0.58	6.09										
NLD	0.60	0.66	0.65	0.70	0.68	0.74	0.64	0.66	0.64	0.46	0.67	0.56	246.99									
NZL	0.77	0.65	0.66	0.70	0.71	0.68	0.54	0.46	0.68	0.63	0.46	0.49	0.44	2.23								
USA	0.78	0.85	0.88	0.80	0.89	0.88	0.86	0.69	0.84	0.71	0.67	0.76	0.73	0.59	2.19							
HUN	0.54	0.62	0.69	0.64	0.70	0.59	0.81	0.58	0.68	0.55	0.43	0.77	0.54	0.50	0.75	1.18						
CZE	0.48	0.53	0.59	0.56	0.56	0.49	0.68	0.44	0.57	0.57	0.51	0.63	0.44	0.44	0.56	19.42						
SVN	0.60	0.78	0.73	0.72	0.79	0.71	0.72	0.64	0.76	0.58	0.45	0.63	0.69	0.50	0.77	0.67	0.46	22.32				
ZAF	0.79	0.82	0.89	0.74	0.84	0.75	0.87	0.56	0.86	0.86	0.46	0.73	0.44	0.64	0.84	0.72	0.64	0.65	31.82			
POL	0.80	0.90	0.89	0.77	0.90	0.85	0.90	0.67	0.89	0.78	0.52	0.78	0.68	0.66	0.88	0.75	0.57	0.83	0.85	17.97		
JPN	0.79	0.91	0.93	0.77	0.88	0.85	0.88	0.58	0.91	0.83	0.53	0.71	0.63	0.68	0.88	0.71	0.57	0.78	0.90	0.91	1.53	
URY	0.89	0.75	0.67	0.76	0.80	0.72	0.66	0.56	0.72	0.65	0.51	0.59	0.53	0.71	0.70	0.53	0.48	0.56	0.73	0.73	0.70	2.92

JER dlo

	AUS	CAN	DFS	NLD	NZL	USA	GBR	ZAF	IRL	ITA
AUS	0.34									
CAN	0.55	7.62								
DFS	0.85	0.65	12.00							
NLD	0.72	0.59	0.80	310.74						
NZL	0.62	0.55	0.61	0.44	2.00					
USA	0.81	0.80	0.77	0.73	0.58	2.29				

GBR	0.71	0.87	0.71	0.62	0.59	0.81	0.29					
ZAF	0.49	0.58	0.49	0.44	0.46	0.68	0.60	30.22				
IRL	0.58	0.66	0.58	0.45	0.50	0.68	0.68	0.65	1.70			
ITA	0.60	0.69	0.67	0.55	0.46	0.70	0.72	0.54	0.62	7.43		

RDC dlo

	AUS	CAN	DEU	DFS	NZL	USA	GBR	NLD	ZAF	IRL	NOR	CAM
AUS	0.34											
CAN	0.71	7.41										
DEU	0.81	0.84	12.34									
DFS	0.79	0.76	0.90	12.99								
NZL	0.79	0.55	0.67	0.57	2.56							
USA	0.71	0.86	0.88	0.86	0.61	2.45						
GBR	0.80	0.89	0.85	0.74	0.62	0.81	0.30					
NLD	0.60	0.66	0.70	0.77	0.47	0.81	0.67	287.88				
ZAF	0.63	0.91	0.78	0.63	0.56	0.81	0.82	0.47	31.82			
IRL	0.65	0.73	0.73	0.62	0.58	0.65	0.73	0.46	0.79	1.61		
NOR	0.71	0.76	0.67	0.79	0.52	0.80	0.70	0.86	0.63	0.44	40.45	
CAM	0.75	0.73	0.81	0.80	0.56	0.81	0.74	0.76	0.65	0.73	0.69	8.95

SIM dlo

	FRM	NLD	SVN	GBR	USA
FRM	0.93				
NLD	0.60	268.25			
SVN	0.68	0.48	24.31		
GBR	0.70	0.66	0.75	0.26	
USA	0.71	0.74	0.78	0.83	2.05

^LAPPENDIX II. Number of common bulls

BSW dlo

common bulls below diagonal

common three quarter sib group above diagonal

	CAN	CHE	DEA	NLD	USA	ITA	FRA	GBR	SVN
CAN	0	152	169	53	197	154	100	77	34
CHE	131	0	692	131	344	570	212	96	88
DEA	147	589	0	186	358	821	272	101	117
NLD	46	123	172	0	96	158	97	54	53
USA	193	321	324	85	0	274	142	110	41
ITA	138	510	729	132	201	0	248	104	106
FRA	90	168	219	82	104	208	0	82	54
GBR	74	78	77	49	106	83	78	0	30
SVN	31	82	107	53	33	98	52	26	0

GUE dlo

common bulls below diagonal

common three quarter sib group above diagonal

	AUS	CAN	USA	GBR
AUS	0	59	79	49
CAN	59	0	79	37
USA	76	70	0	98
GBR	42	32	99	0

HOL dlo

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	796	1701	708	1929	1630	1038	1481	1803	881	157	1236	1714	1232	2340	875	1044	151	482	1445	1069	786

BEL	705	0	841	609	1266	1011	739	1051	1014	569	103	798	1276	470	1019	598	738	144	309	1001	599	368
CAN	1722	810	0	971	2777	1933	1503	1703	2078	669	202	2010	1914	710	4212	1229	1369	198	479	1912	1562	857
CHE	633	613	866	0	1275	858	627	798	883	467	82	781	1033	383	1127	485	591	123	252	830	537	343
DEU	1531	1297	2217	1211	0	3422	1820	2836	2684	1044	233	2799	4008	950	4093	1527	2252	358	547	3581	1649	911
DFS	1282	964	1745	812	2828	0	1340	2063	2168	934	220	1895	2880	876	2847	1184	1684	259	516	2576	1235	783
ESP	775	724	1006	526	1245	1086	0	1460	1334	587	139	1412	1381	543	1845	927	1068	174	447	1512	1044	581
FRA	1075	1049	1218	743	1799	1350	1234	0	1945	859	164	1678	2343	795	2807	1124	1542	195	505	2314	1379	683
GBR	1695	1032	2342	885	2352	1896	1146	1479	0	1344	213	1802	2398	1054	2946	1137	1494	208	544	2135	1314	866
IRL	779	552	610	476	928	798	557	727	1437	0	142	649	1081	808	978	528	662	111	337	855	538	432
ISR	100	58	126	44	176	155	80	96	169	111	0	197	228	133	362	161	193	46	72	245	158	116
ITA	1050	819	1810	716	2224	1730	1087	1192	1661	586	134	0	1944	561	2898	1239	1423	248	383	2249	1253	709
NLD	1513	1412	1811	1020	3836	2696	1239	1687	2343	1031	174	1796	0	1039	3043	1210	1902	272	505	2652	1279	770
NZL	1208	366	639	315	698	618	398	491	954	703	101	446	921	0	1104	507	660	84	338	752	574	564
USA	2444	911	4693	1057	3253	2489	1304	1692	2934	912	354	2587	2674	1038	0	1667	2138	231	637	3027	2304	1341
HUN	682	510	1118	405	1273	1012	770	842	1051	464	107	1153	1044	385	1682	0	1158	152	399	1347	874	587
CZE	722	590	1008	450	1839	1234	814	1075	1228	525	148	1165	1723	472	1821	1071	0	199	435	1867	1052	667
SVN	111	116	152	91	356	211	124	148	166	88	27	220	239	59	186	114	142	0	46	292	150	84
ZAF	420	263	402	212	425	391	389	385	493	294	44	309	412	265	612	317	304	33	0	459	440	319
POL	1176	976	1686	737	3596	2373	1251	1822	2140	774	197	2076	2639	594	3069	1264	1691	263	368	0	1303	827
JPN	675	416	904	389	869	776	567	603	810	380	76	757	792	330	1260	548	569	89	316	804	0	678
URY	619	265	764	253	659	567	439	430	747	328	68	529	600	457	1625	455	483	43	273	685	407	0

JER dlo

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	DFS	NLD	NZL	USA	GBR	ZAF	IRL	ITA
AUS	0	301	210	89	455	573	287	267	78	44
CAN	309	0	172	57	181	535	227	171	19	37
DFS	181	166	0	191	188	315	277	185	72	39
NLD	82	49	194	0	94	128	137	83	52	23
NZL	496	190	168	87	0	371	284	203	158	37
USA	624	554	303	132	433	0	334	336	62	49
GBR	297	230	281	135	299	383	0	207	123	46
ZAF	256	166	170	79	211	350	216	0	46	42
IRL	73	17	67	50	181	63	131	45	0	13
ITA	42	35	38	20	36	51	45	41	12	0

RDC dlo

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	117	50	255	140	166	121	48	39	29	88	14
CAN	119	0	13	211	59	248	121	7	71	8	8	0
DEU	49	12	0	73	20	32	17	22	3	9	19	0
DFS	234	221	64	0	159	243	164	62	50	28	168	0
NZL	140	58	19	152	0	91	76	24	31	16	42	9
USA	170	233	30	241	91	0	162	55	62	37	91	28
GBR	121	121	16	162	74	156	0	51	51	37	95	0
NLD	47	7	21	60	23	54	50	0	2	20	55	0
ZAF	39	73	3	49	27	56	44	2	0	3	0	0
IRL	28	8	9	24	15	37	37	20	3	0	68	0
NOR	78	7	18	143	40	92	99	54	0	66	0	0
CAM	14	0	0	0	9	28	0	0	0	0	0	0

SIM dlo

common bulls below diagonal
common three quarter sib group above diagonal

	FRM	NLD	SVN	GBR	USA
FRM	0	131	0	65	100
NLD	152	0	76	44	33
SVN	0	73	0	0	1
GBR	82	42	0	0	20
USA	114	34	1	27	0

